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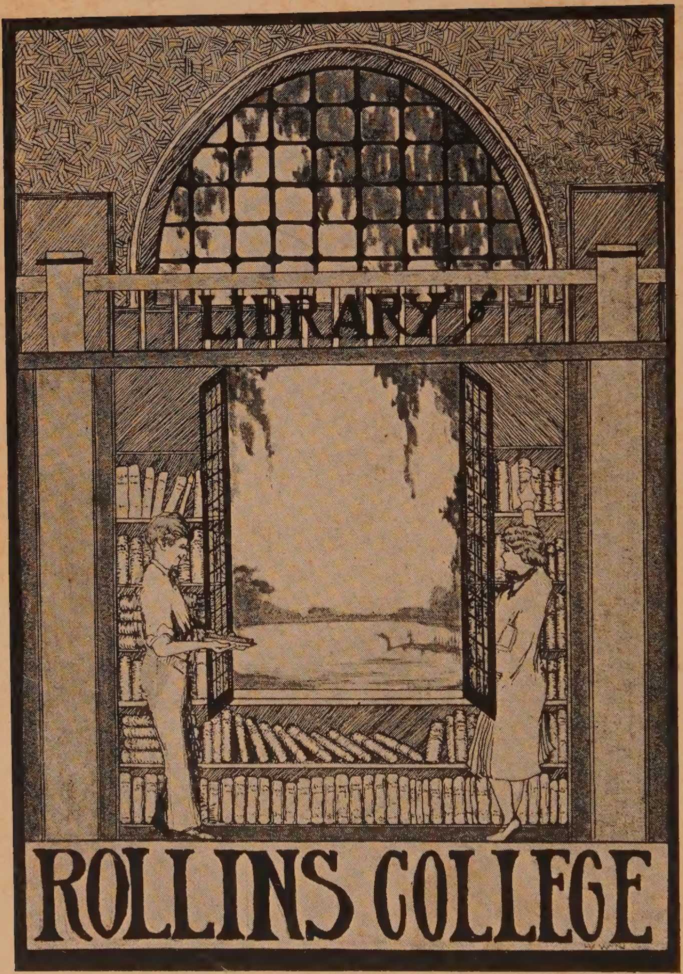

EVERY COLLEGE STUDENT'S PROBLEMS

by

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FOREWORD

The gravity of the obligation of the college to its students has never been so fully realized as at the present time. Evidence of this realization may be found in the introducing into the college curriculum of courses in how to study, in general orientation, and in vocational guidance; in the appointment of deans of men and of women as well as of "personnel" officers; and in the observance of Freshman Day or Freshman Week.

The publication of numerous books and articles setting forth the results of investigations into the problems of college student orientation and guidance shows the concern that college administrators feel in regard to this obligation. These investigations have shown the perplexing and complex problems that confront college students. In work with college freshmen, the writer has found an amazing variety and confusion in the difficulties that beset them. His experience seems to show that their problems arise primarily from three causes. The first is the change from the home and high school environment to the college environment. Here at the outset students find their class assignments longer and more difficult than they have been accustomed to, their grades lower without their clearly knowing either why they are low or how they can be bettered. They do not know how to use the college library, although assignments are made to reference books there; they cannot plan their class preparation wisely, and in short, do not know *how to study.* In addition they have an extension of their social freedom greater than they have previously known, with no such supervision as they have been used to; and they are compelled to make choices, to make decisions on weighty matters such as fraternities, athletics and any number of other extra-curricular activities. The physical and mental adjustment required is very great.

The second cause of which the freshman is likely to be much less aware although it is no less urgent is the matter of *perspective.* Every serious minded college freshman, plunged suddenly into what is to him a confused babel of college life and realizing that this life affects rather directly his own future, is harassed by vague questionings as to *what things* of all the wealth to choose from are really *worth while.* Do the true values lie in high scholarship, social contacts, campus activities, or the development of intellectual ability and personal character? Here is a deep and vital cause of unrest and bewilderment.

The third cause lies in his own lack of knowledge of himself as an individual, so suddenly put upon his own. The condition of his health, his plan, definite or vague, for a vocation or profession, the reasons that led him to come to college and what his objectives are, where his interests lie, how much will power he has to keep him steady in the pursuit of his plan in the midst of deterrent attractions and how much courage and perseverance in the face of discouragement: how great, in short, is his stock of physical and moral qualities? The discovery, often most disconcerting and unnerving, of how little he has hitherto known his true self, in many cases produces mental conflict, confusion, and self-distrust.

From this analysis of the problems that the freshman must solve in adjusting himself to college life the writer is forced to the conclusion that the point of departure in the guidance of college students must be the acceptance of the viewpoint that the student comes to college *to live.* Therefore, the college must be vitally interested in his activities twenty-four hours in the day and seven days in the week. His success or failure both in college and out of college must be measured in terms of his whole development and not merely by his achievements in scholarship. This does not imply that the college can or desires to supervise the activities of the student. On the contrary, what the college must do is to enable the student to become as *self-directive* as possible.

With the foregoing analysis of these problems in mind and the conviction that, although the function of the college should not be supervisory, it should offer the student positive help on how to adjust himself to his college environment and to life itself, this book has been written. In it the writer has endeavored to discuss, with the college student always directly in mind, such widely different subjects as good health and its relation to success both in college and out; college organizations; wise investment of time, effort, and money; personality and how it may be developed; the laws that govern learning; achievement and how it is to be measured; the enjoyment of wise living; and the choice of a vocation. In addition to these larger matters he has attempted to give definite and practical suggestions as to how to use a library, how to make notes on lectures and reading, how to cultivate the ability to think and to form reliable judgments, and how the student may grow to be a more understanding reader.

The material in this book represents many years of earnest effort to locate and to help solve the problems which confront college students. During a number of years it has been put to the test of actual classroom use, and students themselves have helped in determining what should be included in this volume. Their reactions were particularly helpful in determining the organization of the material, the kind of exercises, and the number and kind of references which should follow each chapter. The supplementary matter at the end of each chapter has been especially designed for the use of college students in the hope that by actual practice they will be enabled to solve their own problems.

The writer owes much to the students in his classes who have by their reactions aided him in selecting his materials. He is also greatly indebted to many of his colleagues in the University of Nebraska for helpful criticism and suggestions. He is under special obligation to three students, Audrey Beales, Homer Deadman, and Dorothy Shiley, who read and criticized the manuscript; to the librarians of the University of Nebraska for suggestions on Chapter VII; to Dr. Charles Harms of the University of Nebraska Medical Staff, for helpful suggestions on Chapter VI; to Dr. D. A. Worcester for help on the psychological aspects of the material; but most of all to Dean W. E. Sealock, who suggested that the material be published, and who gave constant encouragement and many helpful suggestions. The author wishes to acknowledge also his indebtedness to Dr. Harlan C. Koch and to Dean M. E. Haggerty of the School of Education, University of Minnesota, who read the manuscript critically and sympathetically and offered much excellent advice.

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CHAPTER I

STARTING RIGHT

The Woolworth Building in New York City towers almost eight hundred feet above the surface of the earth. Its foundation rests on solid rock ninety feet below street level. The primary source of its strength as a structure lies in the foundation upon which it is built. Our country has become one of the great nations of the modern world in wealth and in moral and political influence. The foundations of its greatness are to be found in the ideals, the faith, and the spiritual and physical courage of our forefathers. The primary source of strength in a nation as in a structure, lies in the foundation upon which it is built. The American system of education has grown to be a system of remarkable effectiveness. Nearly a million men and women devote their entire time to the business of teaching, and approximately one-fifth of our children and young people attend our schools and colleges. The foundation upon which our system of education rests is the idea that enlightened knowledge is a source of power and that our hope of the future rests on the education of all our people. The primary source of strength in an institution as in a structure and in a nation, lies in the foundation upon which it is built.

Similarly a successful life following a successful college career depends much upon what its foundations are. In addressing the freshmen at Yale University a few years ago, Dean Charles R. Brown related how William Howard Taft used his college years to lay the foundation of a successful career. He said:

> Forty-eight years ago a freshman walked in here at Yale who gave his name as William Howard Taft. The name was not known then all around the world. It was merely a name given to him by a good family in Cincinnati, but not one in a hundred of his fellow students had ever heard of it before. He began right off to clothe that name with meaning. He was clean and straightforward in his mode of life. He was genial and likable—he made friends right and left. He was thorough and accurate in his scholarship, a Phi Beta Kappa man when

the time came. He was faithful in meeting the larger obligations of college life, showing even then a keen interest in the privileges and responsibilities which go with public service. He graduated with honors forty-four years ago. Millions of people in all the lands of the earth hold that name, the name of the Chief Justice of the Supreme Court of the United States, in high esteem. And he made it so.[1]

Modern psychology teaches that we learn what we do and later we do what we have learned. The psychologist William James believed that we, in our youthful days, determine largely what we will be in later years. He says:

> Habit . . . dooms us all to fight out the battle of life upon the lines of our nurture or our early choice. . . . Already at the age of twenty-five you see the professional mannerism settling down on the young doctor, on the young commercial traveller, on the young minister, and on the young counsellor-at-law. You see the little lines of cleavage running through the character, the tricks of thought, the prejudices, the ways of the "shop," in a word, from which the man can by-and-by no more escape than his coat sleeve can suddenly fall into a new set of folds. The great thing, then, in all education, is to make our nervous system our ally instead of our enemy. We must make automatic and habitual, as early as possible, as many useful actions as we can, and guard against the growing into ways that are likely to be disadvantageous to us, as we should guard against the plague. . . . The hell to be endured hereafter, of which theology tells, is no worse than the hell we make for ourselves in this world by habitually fashioning our characters in the wrong way. Could the young but realize how soon they will become mere walking bundles of habits, they would give more heed to their conduct while in the plastic state. We are spinning our own fates, good or evil, and never to be undone. Every smallest stroke of virtue or of vice leaves its never so little scar. Nothing we ever do is, in strict scientific literalness, wiped out. As we become drunkards by so many separate drinks, so we become saints in the moral, and authorities and experts in the practical and scientific spheres, by so many separate acts and hours of work.[2]

If a right start is so important the query naturally arises, "What should a college student do to make sure that his start is right?" The answer to this question may be found in (1) a successful adjustment to the conditions of college life, especially those which present significant differences between high school and college; (2) the provision of the right kind of equipment for college work; (3) a careful selection among organizations; and (4) the heeding of other suggestions which students have found helpful in achieving success in college.

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[1] C. R. Brown, *What is Your Name?*, p. 2. For name of publisher and other data regarding books mentioned in footnotes, see the "Selected References" at the end of each chapter.

[2] William James, *Psychology, Briefer Course*, p. 143f.

SIGNIFICANT DIFFERENCES BETWEEN HIGH SCHOOL AND COLLEGE

The college student will realize early in his college career that going to college is significantly different from going to high school. The first difference is a greatly increased degree of freedom. This freedom results in part from the irregular program of the college course. In high school each pupil had a regular and fixed daily program. He was told what to do and there was a careful check to see that it was done. In college, the student spends a much smaller number of hours in the classroom. He finds at his disposal much more time before, between, and after class hours. His problem is how to distribute this time wisely between preparation for his classes and outside activities. In the next chapter we shall suggest that this problem may be solved in part by making and following a carefully planned daily and weekly time schedule.

This new freedom manifests itself also in a financial way. With some exceptions, the expenditure of money has hitherto been made or at least supervised by parents. Now the student finds it necessary to plan and to make his own expenditures. Unless he has been trained in the proper spending and saving of money, he is likely to waste much of that which parents, guardians, or friends are providing. Oftentimes such money represents years of hard work, careful planning and saving, and wise investment. A careless son or daughter may dissipate in a short time the earnings of many years if there is no assumption on his or her part of financial responsibility. At least during his first year in college, each student should keep an accurate record of all receipts and expenditures. At the end of each month he should send a statement of this record of receipts and expenditures to parents or guardians. Such a procedure will serve as an incentive to him to keep an accurate record of all finances, and it will demonstrate a true appreciation of the generosity of those who provide the funds, besides offering an opportunity for advice from home how funds might be spent to better advantage.

There is also greater freedom in social relationships. The choice of companions and friends during high school years has generally been supervised closely by parents and teachers. Now the student finds himself in a situation in which he must assume responsibility for making and maintaining his social contacts. He alone must choose his companions and friends. There should be nothing accidental about this choice. Each new companion or friend should be chosen with the utmost care. Personal qualities, interests, previous training, ambitions, habits, attitudes—all of these should be taken into consideration. Spillman is right when he says:

> Friends are not made en masse, but come in single file, and only after they have been chosen . . . The biography of every useful man records the name of a friend on every milepost of his career. . . Carlyle suggested that the help that one man can yield to another is infinite. "Friendship cheers like a sunbeam, charms like a good story, inspires like a brave leader, binds like a golden chain, guides like a heavenly vision."[1]

The new freedom of the student also affects his spiritual relationships. This involves his religion. He may come from a home or a community in which attendance at church services is customary. Now the temptation may arise to discontinue this practice. The student should settle the question of church attendance upon the basis of the benefit which he himself may derive from it and the service which his attendance may render to others. He should remember that millions have been encouraged, strengthened, and comforted by attending religious services and by participating in religious exercises. If church attendance helps him to live a better life he should certainly not fail to continue it.

Spiritual relationships involve much more than one's religion, however. The spiritual aspect of life includes all of the attitudes, ideals, and appreciations which one builds into his character. Our philosophers of education are today placing much emphasis on this aspect of life. We are told that to learn facts and to acquire knowledge are of little value if such learning and acquisition are not accompanied by the learning of wholesome attitudes and appreciations. The truly educated man or woman enjoys fine music and paintings, beautiful poetry, truthful plays, as well as the beauties of nature in flowers, trees, and birds. He exemplifies also a genuine love of truth, honesty, loyalty, and lofty ideals, which, combined, fill out a rich and happy life. The high school will already have made a beginning with the student in this direction. In college he has an even greater opportunity to develop extensively and intensively this side of his life. The quantity and the quality of the spiritual relationships which he develops during his college career, will largely determine the amount of inward joy and contentment which will be his in mature life. It is in the springtime of our lives that most of us select the activities which hold our interest in later years. We have the opportunity of choosing interests that lead nowhere, that shrivel life at middle age and make it insipid and inane in old age; or we have the opportunity of choosing interests which develop and enoble us. They make middle life a period of rich achievement and old age a deep and inward satisfaction.

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[1] H. C. Spillman, *Personality*, p. 199f.

In a word, the greater freedom of college life manifests itself everywhere. There is a new freedom in choice of food, of clothing, of hours of sleep, of physical recreation, of mental relaxation; as well as a more significant choice in regard to law observance—a choice between obeying or disregarding house, college, and city laws and regulations. The student should learn to make wise use of this new freedom and these new opportunities and to capitalize them into increased powers of discrimination, insight, and self-control.

The second difference between high school and college is a more general use of the lecture method in college. This means that the student will need to develop his ability to listen well. He must learn to pay close attention to the assignments which, as a rule, are made orally; he must learn to follow closely an oral discourse extending over a period of an hour; and he must learn, while listening, to organize the material of the lecture in the form of notes so that he may be able to refer to them profitably later in preparation for an examination or for use in his vocation. In a succeeding chapter, we shall have more to say about the way in which note-making may be successfully done.

The third difference between high school and college will be found in the greatly increased amount of reading required in college courses. In many high schools all of the required reading in courses is confined to a single textbook. In college courses, the work may include the use of a number of textbooks as well as the reading of some or many supplementary references. Instead of reading, as in high school, a single reference of ten or a dozen pages a college student will frequently be called upon to read a hundred or more pages to prepare one assignment properly. In order to meet these demands successfully, he will need to increase his speed in reading and to acquire a more rapid and more accurate comprehension of what he reads.

The student will find also that the standards of scholarship are much higher in college than in high school. The passing grade in college is frequently lower than in high school, but even a passing grade in a college class may require a much larger quantity and a better quality of work than was required for a passing grade in high school. College freshmen are frequently disappointed when they receive their grades to find that although in high school they ranked high in their classes they now have difficulty in securing even average grades. Such a freshman must realize that while he was a leader in his high school group and could easily excel, he is now forced to compete with the leaders from other high school groups.

The superiority of standards will be most evident in the quality of oral and written reports. In high school where the relationship between pupils and teachers is generally a fairly personal one, teachers are inclined to overlook many faults in the reports which pupils make. In college, on the other hand, this relationship between students and instructors is likely not to be so personal, and hence comes the tendency on the part of instructors to require a higher quality of work. Students should welcome these higher standards as a challenge to superior achievement and as a guarantee of substantial growth.

The fourth difference between high school and college is the need for adjusting oneself to the new physical conditions of a college campus. The student probably carried on all of his high school work in one building and the location of rooms in this building was a simple task. If the college to which he goes is large, the student will need to acquaint himself with the location of many buildings. He will need to know the scheme of numbering rooms in the different buildings. Frequently opportunities are afforded for seeing the campus under the direction of a competent guide. Each student should avail himself of such an opportunity to acquaint himself with his college home as early as possible in his freshman year.

The fifth difference between high school and college is the demand for more self-direction in activity, the need for more independence in thought and action. As we have said earlier, during a pupil's elementary school and high school years virtually all of his activities were planned and supervised by parents and teachers. Not only was he told what to do, but he was told also how to do it; and when he had done it, he was told whether it had been done in a right or a wrong way. In some high schools pupils have an opportunity to plan much of their work, but even under the most favorable conditions, study periods are supervised and much of the work receives the personal attention of teacher or parent. While the college student too is generally told what to do in assignments, the matter of how he is to do his work is usually one for him to decide. Furthermore, only a small portion of the assigned work can ever be called for in a college course. If the course is to accomplish its desired end, the student must take the initiative and be self-active. He must assume responsibility for his own program and direct his own activities, not choosing to be a pupil merely, but becoming a real student, a seeker of wisdom and of truth. Spillman has this in mind when he says:

> The most any institution of learning can do is to hold the light by which you may ignite your own candle. A school may be richly endowed with libraries and laboratories, but these will have no meaning until your own world-equipment is added. Education means to lead out of yourself, not into somebody's schoolhouse. . . The correct interpretation of education holds that the mind of man is not a storehouse for the dead facts of other minds, but a living fountain flowing always from an inexhaustible self-source.[1]

Enough has been said to indicate that life in college is significantly different from that in high school. Thus, it (1) affords much greater freedom in many respects; (2) utilizes the lecture method more generally; (3) demands much more reading and a better quality of it; (4) sets higher scholastic standards; (5) necessitates adjustment to the physical conditions of the campus; (6) calls for more self-direction in activity and greater independence in thought and action.

EQUIPMENT ESSENTIAL FOR SUCCESSFUL COLLEGE WORK

An architect makes drawings and blue prints which show how a building is to be constructed. He also makes detailed plans which a contractor is expected to follow exactly. Carpenters, plumbers, electricians and other artisans in turn use these drawings, blue prints, and detailed directions in performing their respective parts of the work of construction. Efficiency in the work of everyday life depends to a large degree upon the ability of the worker to follow instructions, and to use the necessary tools and materials in such a way that the product of his work will be acceptable. The efficient carpenter knows how to interpret the plans and blue prints of the architect. He also provides himself with a kit of tools so that the quality of his workmanship may be of the best. The college student likewise must learn how to follow instructions and if he is to be efficient, he also must have suitable tools.

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[1] Spillman, *op. cit.*, p. 18.

To enable a student to do his work adequately, he should provide himself with the following equipment:

1. Such textbooks as are prescribed in his courses. A mastery of the subject-matter of these texts will be assumed by instructors at the end of the semester. The lectures and the discussions in the class are frequently elucidations of material in the texts. It is of vital importance, therefore, that each student should procure copies of the required textbooks. As a rule it is not advisable for students to own books in partnership. There is too much likelihood that both owners will want to use the same book at the same time. This leads to unpleasant situations and not infrequently both members of the partnership fail in the course.

2. A standard looseleaf notebook which students and instructors are agreed is the best. It is important to secure the kind of a notebook that will conform to the size of the ordinary history notebook paper. Virtually all of the multigraphed outlines which are commonly given students by instructors are made up in the same size and are punched to fit this type of notebook. The advantage of the looseleaf notebook lies in the possibility of adding or removing papers at any time. Assignments may be received and put in their proper place, notes may be made and included as desired, written work may be removed, handed in, and later be placed in its proper place when it has been returned by the instructor. If the notes on a particular page have not been prepared carefully, they may be removed and destroyed without marring the appearance of the notebook. One other advantage of the looseleaf notebook is the possibility of removing whole sections on a certain subject and filing them for future use. While the looseleaf notebook is desirable for most college work, some departments find it advantageous to require students to use bound notebooks. This is particularly true in some of the science departments where it is desirable

to have all of the laboratory notes bound in one volume. The student should be willing to adapt himself to the requirements of his instructors. He should guard particularly against the purchase of notebooks of varying sizes. With the possible exception of an occasional requirement of a bound notebook for science, virtually all college notes may be kept in a standard looseleaf notebook. The student should not carry about with him more than one of these notebooks. If the notes become too voluminous, he may remove parts of them and file them properly in his room.

3. A supply of at least five hundred sheets of history notebook paper of standard size. He should also purchase a number of pasteboard dividers. Notebook paper may be bought to the best advantage in quantities of five hundred sheets. This makes it unnecessary to make many trips to the book store and it also insures a supply of paper when it is needed. Scratch pads should also be provided.

4. A fountain pen and a dozen standard pencils. Since it is important to make notes permanent the first time they are written and since permanency is more fully insured by ink than by pencil, it is very important that a college student provide himself with a good fountain pen. The science of fountain pen manufacture has advanced to such an extent during the past decade that fountain pens are now much more desirable from every standpoint than the penholder and pen. Since students go from building to building the ink well is no longer practical. The student should provide himself also with a dozen standard pencils. Pencils may be bought in this quantity to advantage and such a quantity insures the presence of a pencil when it is desired. The eversharp pencil has now been perfected sufficiently to warrant its recommendation also. It may well be substituted for the old-fashioned wooden pencil.

5. Files, with cards and folders. Most of the work of the business world is now carried on through the use of files. Files have been perfected for a large variety of business activities. Every student should have at least a few standard files. He should have a small file for 3″x 5″ cards and, if possible, a larger file for papers, the standard size being 10″x 12″. When files are purchased, one should secure five hundred or a thousand 3″x 5″ cards for the small file, and one hundred or more folders to fit the larger file.

6. A dictionary and such manuals and reference books as his courses

demand. The *Concise Oxford Dictionary,* the *Desk Standard Dictionary* and the *Webster Collegiate Dictionary,* are three excellent books of this kind. If the student has difficulty with the formal elements in English, he should provide himself with a book explaining punctuation and correct use of English. Any good secondary school composition book is acceptable for this purpose. If the student is in need of special manuals or reference books in his college courses, he should consult his instructor for suggestions.

7. A typewriter. Since virtually all of the letter writing in the business and vocational world is done with the typewriter, every student should, if it is possible, learn to use one. The ability to use a typewriter has a number of advantages even during his college course. It makes possible the typing of class notes, desirable both from the student's viewpoint, and from that of his instructors. He also develops a skill which may have financial advantages during both his college career and his later life. Skilled typists are always in demand. If the student can afford to do so, he should purchase a typewriter for himself. If he cannot afford to buy a machine, he may be able to take a course in the department of business, thus at the same time becoming proficient in the use of a machine and incidentally transferring his own notes to typewritten form. If a student purchases a typewriter, he should make sure that he secures one with a standard keyboard. The following machines have standard keyboards: Underwood, Remington, Royal, L. C. Smith, and Corona.

In addition to the necessary equipment mentioned in the foregoing list, a student may well provide himself with clips, rubber bands, library paste, scissors, a ruler, blotters, ink, erasers, a carrying case, a pen knife, and some gummed rings to be used as reinforcements for the holes in his notebook paper. The equipment essential for successful work in laboratory courses will be suggested by instructors in such courses.

JOINING ORGANIZATIONS

Gregariousness is one of the strong human urges. The desire of human beings to be together is basic in all organizations, homes, churches, governments, lodges, and clubs, existing primarily for one purpose, namely, to give men an opportunity to associate together, to enjoy each other's companionship, to share each other's joys and sorrows. Frequently the length of the life-span is determined by whether one lives alone or with fellow beings. Many older people who live alone tell us that appetite disappears, ambition lags, hope weakens, and interest in life ebbs with the beginning of a life alone. Contrariwise, association tends to stimulate life, to increase ambition, and to stir one to action. While loneliness may become the mortal enemy of health and happiness, companionship often is an elixir of life.

Mere classroom association has never satisfied completely the craving of students for companionship. Hence there have come into existence at our collegiate centers organizations of many kinds. Perhaps the most widely known organization is the social fraternity, including in that term both the fraternity and the sorority. The first fraternity was organized in the United States in 1776. Since that time thousands of fraternities have come into existence at colleges in all parts of our country. Certain separate groups have banded together to form national organizations. In regard to fraternities the student will need to answer three questions: (1) Is it desirable for him to belong to a fraternity? (2) If it is desirable, which fraternity shall he join? (3) Whether he joins a fraternity or not, what shall be his attitude toward fraternity and non-fraternity students?

In attempting to answer the first of these three questions the student will need to consider both the good and the bad features of fraternities. Among their good points we may mention the opportunity to associate with people who are like-minded; to develop strong, intimate friendships; to contribute to the development and perpetuation of high personal and group ideals; to engage sanely in social activities; to help in an organized way to propagate and to perpetuate college spirit; to find friends in other collegiate centers in case of a visit or a transfer from one college to another; to have a suitable substitute for home while at college; and to serve one's fraternity and to enjoy the benefits of it after college days are over.

Among the objections to fraternities we may mention the danger of exclusiveness, which may develop into snobbishness; of selfishness which may seek to win everything for one's fraternity at the cost of temporary or permanent harm to others, and may seek also to put personal or fraternity advantage above the interests of the team or the college; of extravagance in the spending of too much time and money on activities which are not worth it, especially on social affairs;

of a cultivation of tastes in dress, in social relationships, and in living generally, which cannot be satisfied indefinitely either during college years or later; of mistreatment by upper classmen; and of the indulgence of habits which are not conducive to good health or to a high type of citizenship.

A study of these opportunities and dangers reveals how much the quality of a fraternity depends upon its local membership, for if a fraternity is composed of men or women of high ideals and superior habits of living, a student may profit immeasurably from membership. If, on the other hand, the fraternity is made up of men or women of questionable ideals and inferior habits of living, untold harm to the new member may result.

In addition to the quality of the local membership of the fraternity the student should consider another important matter. This is the sacrifice which he must make in independence if he becomes a member of a fraternity. He must remember that to be *in* something implies that he is *out* of something else. When an individual becomes a member of an organization he automatically obligates himself to the organization in many ways and consequently puts himself in a position where he cannot obligate himself to other organizations or activities. This sacrifice in independence implies too that a fraternity—and most other organizations—demands more from its members than it can ever hope to give in return. The success of every organization depends upon such individual sacrifices.

The desirability of membership in a fraternity should therefore be determined by a number of considerations: by the good and bad features of fraternities in general, by the quality of the members of the local organization, by the willingness of the student to sacrifice some of his independence, and by his willingness to give his fraternity more than it can ever give him.

The good fraternities everywhere interpret worthy membership in terms of high scholarship, wholesome habits, and noble living. The failure of students to realize how much they must willingly sacrifice in order to make fraternity life successful accounts largely for the disappointment occasionally manifested by students when they are not elected to membership in a particular fraternity. When students go home after the "rushing season," broken-hearted because they have failed to "make" a certain fraternity, they demonstrate thereby their misconception of the function of a fraternity and their own real unworthiness for membership. A student who deserves membership but fails to be elected knows that it is the fraternity and not he that loses most. He immediately proceeds to demonstrate his worth by proving himself an excellent student and a worthy citizen in the college community.

If the student decides that membership in a fraternity is desirable he will await an invitation. Students frequently come to college with the idea that they may choose the fraternity to which they wish to belong. This is not, however, true. It is the organization which makes the choice and issues the invitation. Election into a fraternity is usually the result of some special relationship or ability. If the student is favorably related to a fraternity—that is, if some immediate member of his family belongs to it—admission will be easier. Also, if a student can offer special ability in scholarship, leadership in athletics or debate, wealth, social standing, or attractive appearance, his chance of admission is thereby greatly improved.

If the student is invited to join a fraternity he should, of course, investigate its standing before pledging himself to it. He should first consider the quality of the local organization. This he may do by consulting upper classmen who are familiar with campus conditions. He may also consult his adviser or some other member of the faculty. Sometimes the college publishes the relative scholastic standings of campus organizations. These should be taken into consideration. In addition the student should learn something of the national standing of his prospective fraternity. This he may do by consulting Baird's *Manual of American College Fraternities,* available in all good libraries.

In many American colleges where fraternities are present, there has grown up a spirit of antagonism between fraternity and non-fraternity groups. There is a growing feeling that this spirit is unnecessary. Its elimination will depend upon the attitude of students in both groups. Every student should heed the advice of Clippinger who says:

> Whether the student is in or out, he ought to develop a spirit of tolerance. The danger is that if one is a member of a group he may become intolerant of other groups and of those who belong to no group. The same danger exists for those who are not thus identified. One achievement to be realized withal is that of perfect team work in all college activities so that these social ties or lack of them may not stand

in the way of the functioning of the larger group of the entire college community. This applies both to curricula and extra-curricula activities. If one's personal, private, and social interests be duly subordinated to the welfare of the entire institution, they will maintain a more healthful and helpful position in the student life.[1]

What we have said about fraternities will apply equally well to other organizations, both in college and outside of college. Virtually every advantage or danger of fraternity life may be found in every other organized group. It will be well for the student to make a careful study of the various organizations which exist at the college. He should visit the organizations to which he wishes to belong. If membership is offered, he should join a limited number of such groups. Although he will find that these organizations are of necessity manned by upper classmen and that he will have little or no opportunity to serve in an official capacity during his first year, yet membership should mean active participation for him in the affairs of the organization and he should be willing and careful to perform any duties which may be assigned to him.

In joining organizations the student should make a well-balanced selection. While his interests may incline him to belong only to organizations of one type, it will be advantageous from the standpoint of his all-around development to make a selection from a variety of types. For example, while the musically inclined student might desire to join the band, the choral society, a church choir, and a quartette, he would be wiser to join fewer musical organizations and instead to fill out his program with membership in a literary society, a religious association, or on an athletic team. Such a variety of organizations will tend to develop the breadth of mind and tolerance which we mentioned earlier as desirable.

A word should be said about the relationship of curricular to extra-curricular activity. While membership in organizations is of undoubted value to a college student, he should never forget the real purpose for which he is in college. We shall find in a later chapter that this purpose is the development of personality and that hand in hand with it goes high scholarship which is without question a primary quality to be developed during one's college career. In order to achieve this purpose the student must preserve a fine balance between his regular class work and his extra class activities. His scholarship should never be allowed to suffer materially because of his membership in organizations. Both his regular class work and his activity in organizations should contribute to a growing, developing, improving personality.

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[1] W. G. Clippinger, *Student Relationships*, p. 96.

Some Other Suggestions

The college student should make some adult connected directly with the college, his personal adviser and confidant. In many colleges such an adviser is assigned to every student. The student should become acquainted with his adviser early during his college life, and he should not hesitate to discuss with such an adviser any problems which arise in his mind. It will relieve him of much worry and it will help the adviser to know the difficulties or advantages under which the student is working and to guide him to wise decisions on troublesome questions. The student should note the office hours of the adviser either as posted on his door or announced in the printed programs of the college; and if the office hours conflict with hours on the student's schedule, he should see his adviser and make special appointment for an interview.

A sympathetic relationship between an instructor and his students is essential to the success of both. Some students assume that instructors are their natural enemies. With few exceptions this assumption is erroneous. Practically all colleges now make the tenure of an instructor dependent upon his success in his student relationships. As a rule instructors who know their students make more effective teachers than instructors who do not. It becomes a duty, therefore, on the student's part to help the instructor to become acquainted with him. One way in which he can do this is to ask intelligent and stimulating questions in classes when the opportunity is given to do so. Another way is to make contributions to class discussion. If the student is fairly sure that he has a worthy contribution he owes it to himself, to his fellow students, and to his instructor to give expression to his viewpoint. He may also enable his instructor to know him by doing a superior quality of work.

Still another way to promote this acquaintance is to make an appointment with the instructor once or twice during a semester. If the student is alert in his work many problems will arise in his mind during the semester about the subject-matter of the course. These problems should be jotted down as they occur to his mind. When he goes for an interview some of these problems should be brought up for discussion. Such an interview will be of help to him in mastering the subject-matter of the course, and it will likewise be of help to the instructor in learning to know him. The majority of new students do not try enough to help the instructor to know them. Some few indulge in the bad practice of attempting to interview the instructor at the end of the class hour. Unless there is an urgent reason for asking the instructor a question at the end of the hour, a question which would entirely lose its point if asked at any other time, the student should leave the room at the end of the hour and reserve his question for the next class period or for an interview previously arranged.

Regularity, promptness, and faithfulness are three virtues which every college student should cultivate. Many students fail in their college work because they attend classes irregularly, or are tardy unnecessarily, or fail to hand in written work on time. A large number of failures in the first year of college may be attributed to one or more of these three causes. If a student is compelled to be absent from class, he should, if possible, notify his instructor in advance. If such notice is not possible, he should see his instructor at the very first opportunity after an absence. He should acquaint himself with the regulations of the college in regard to absence and tardiness, he should make every effort to have his absence or tardiness excused as the college requires, and he should arrange to make up all work missed through absence. In the student's observance of regularity, promptness, and faithfulness his own self-activity plays an important rôle. If a student ignores his absence or tardiness his instructor naturally assumes that the student lacks the needed interest in his work.

Promptness includes keeping one's appointments. If the student is fairly certain that he will be unable to keep an appointment when he makes it, either he should not make it at all or he should say that there will be some doubt as to his ability to keep it. In every case if it is necessary to break a temporary or permanent appointment, the student is under obligation to notify the person or persons involved. This applies not only to appointments with instructors and officers of the college but it includes also every person with whom the student has contacts.

We have already said something about the higher standard of scholarship which is required in the college as compared with that required in high school. We want to add here that the student is under obligation always to do his best. Nothing is so discouraging to an instructor as to find that the students in his classes are not putting forth serious effort. The failure of the instructor to do his best might serve as an excuse for the student to do the same, but in most cases college instructors conscientiously strive to give their best to their classes. The success of any course depends upon the contribution which both the instructor and the students make to it. No instructor, however gifted in teaching, can make a course successful all by himself. A course becomes successful only when the stimulations which he offers are responded to by the students who take it.

The student should learn also to do his share in undertakings outside of the classroom. One of the difficulties in a democracy is that everybody wants to be the leader and nobody wants to be the follower. In a recent address by a prominent American educator much emphasis was placed on the need of development in American schools of a high type of followership as well as a high type of leadership. It takes sympathetic coöperation to make group life successful, a statement which applies to any group which is organized and operated according to the principles of democracy.

If you want to go to the kind of a school
  That's the kind of a school you like,
You needn't slip your clothes in a grip
  And start on a long, long hike.

You'll find elsewhere what you left behind
  For there's nothing that's really new,
It's a knock at yourself when you knock your school,
  It isn't your school, it's you.

Real schools aren't made by students afraid
  Lest somebody else get ahead;
When everyone works and nobody shirks
  You can raise a school from the dead.

And if while you earn the honors you crave,
  Your neighbor may earn some too,
Your school will be what you want to see,
  It isn't your school, it's you.[1]

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[1] From the Anthony, Kansas, High School Annual, 1922.

QUESTIONS

1. Why is a right start of such importance in any activity? Why particularly in college?
2. What are the significant differences between going to high school and going to college? How many of these differences have you discovered in your own experience? Have you discovered any differences which are not mentioned in this chapter?
3. Check your own classroom equipment against the list of equipment suggested in this chapter.
4. Why is it desirable to own your textbooks? What objections can you advance against buying textbooks in partnership? To what uses may a good dictionary be put?
5. To how many different organizations did you belong before you came to college? What prompted you to belong to them? Which organizations would you be interested to join in college? Do they show sufficient variety?
6. How should a student proceed in determining whether or not he should join a college fraternity? If he decides to join a fraternity how may he determine whether it is a desirable one? If he becomes a member, what duties should he assume? If he does not become a member what should be his attitude toward fraternities?
7. What should be a student's attitude toward other organizations in the college? How many should he join? What kind should he join?
8. Describe the ideal relationship that may exist between student and adviser.
9. What duties has an instructor in his relationship with students? What are the obligations of the student to his instructor?
10. Why are promptness and regularity of attendance so important? What psychological reason is there for always doing one's best?

EXERCISES

1. Give several examples from your own experience which demonstrate the importance of a right start.
2. Read the entire first chapter in *What is Your Name?* (Selected References, number 2.) What are some of the qualities which have helped men and women to make their names famous? Can you mention famous names which were inherited and not made?
3. Distinguish between freedom, liberty, and license. Give examples of people in your circle of acquaintances who exemplify these qualities. Is there any danger that the freedom of college life may run to license? If so, how?

4. Do you think religion is vital in modern life? Why, or why not?
5. In visiting stores and shops note how extensively files are used, and, if possible, for what purposes.
6. If an instructor is obviously unsympathetic, or rude, or "hard boiled," what may you do about it? How may you determine whether you have developed the right attitude toward your instructors and toward your work?
7. Arnold Bennett tells us in his *How to Live on Twenty-Four Hours a Day*, how an Englishman might invest his time to better advantage. Make a list of suggestions from Bennett's book which you feel are helpful to you as a college student.
8. Explain Clippinger's assertion that "college experience is not only a preparation for life. . . . It is life itself." (Sel. Ref. 3.)
9. What objections do you see to the desire to be a hermit while one is in college? What objections may one make to the saying, "Study men, not books"? (Sel. Ref. 7.)
10. Read the entire chapter by James on "Habit." It is one of the classics in educational literature.
11. If you are interested in fraternities read the introductory chapter in the last edition of Baird's *Manual of American College Fraternities.* This will give you a favorable picture. Then read "Shall a Boy Join a College Fraternity?" in the *Literary Digest* for June 17, 1922. You will also find much interesting material about fraternities in Banta's *Greek Exchange,* published by the Banta Publishing Company, Menosha, Wisconsin.

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CHAPTER II

THE WISE USE OF TIME, EFFORT, AND MONEY

Speaking of the value of time, Percival White says:

> Time is the most precious thing in the world. Time is our prime standard of measurement. We can hardly state a thought or a conclusion without bringing in the element of time. We eat by time, sleep by time, work by time, play by time. We record our accomplishments, not in terms of pleasure, or of performance, or of satisfaction, but in terms of time. Time is money, as our forebears were fond of saying. But money is a tangible thing. The more you save, the more you have. Time is far more subtle stuff. As soon as a man seriously starts saving time, make up your mind that he will no longer have a moment to spare. Despite its recent origin, the effect upon the world of the Time Idea has been incalculable. More material progress has taken place in the past century than in all the rest of history put together.[1]

Arnold Bennett says on the same subject:

> Philosophers have explained space. They have not explained time. It is the inexplicable raw material of everything. With it, all is possible; without it, nothing. The supply of time is truly a daily miracle, an affair genuinely astonishing when one examines it. You wake up in the morning, and lo! your purse is magically filled with twenty-four hours of the manufactured tissue of the universe of your life! It is yours. It is the most precious of possessions, a highly singular commodity, showered upon you in a manner as singular as the commodity itself. For remark! No one can take it from you. It is unstealable. And no one receives either more or less than you receive.[2]

College students vary widely in what they bring to their college career. Some are rich and some are poor; some have had an excellent training in high school, some have not; some come from homes of culture and refinement, some have been reared in adverse circumstances. But in this one respect all stand on the same level, namely, that all have the same amount of time at their disposal. There are for all seven days in each week and twenty-four hours in each day, one-hundred sixty-eight hours. A student may be handicapped by poverty, by training, by experience, but if he has normal intelligence and if he invests his time, effort and money properly during his college years, he will make an auspicious start on a successful life career. One serious problem of every college student as well as of every man and woman is how to invest to best advantage the golden hours of time which Providence gives us all.

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[1] Adapted from "The Almighty Minute," *Atlantic Monthly* (July, 1920).

[2] Arnold Bennett, *How To Live on Twenty-Four Hours a Day,* p. 16.

WHAT CONSTITUTES EFFICIENT LIVING

The editor of the *Industrial Arts Magazine* a few years ago told of a great teacher "who was fond of saying that he could play the piano as well as anybody, if he could get the right finger on the right key at the right time."[1] Efficiency implies the best results with the least possible effort in the shortest possible time. Efficiency experts have demonstrated in recent years that most of us can greatly increase the quality and the quantity of the results of our effort in a given length of time if we observe certain rules of procedure.

Dr. Gulick once asked a boy at a swimming meet if he would be willing to enter a contest in swimming under water if he knew he could win. The boy replied that he certainly would. Finding that the boy did not know how long he could hold his breath, Dr. Gulick discovered by the use of a stop watch that he held his breath for only fifty-six seconds. When Dr. Gulick showed him that he could greatly increase the period of holding his breath by breathing deeply and slowly several times, thus oxygenating the blood, the boy succeeded in holding his breath for two minutes. At this point the boy was asked to go through the motions of swimming and it was found that he took sixteen strokes per minute. Finally he was asked to write down his plan of diving into the water, taking twenty-four strokes under water and coming up. An hour later, this boy, following the plan agreed on, easily won the contest.[2]

The experience of this boy is a notable example of efficient living in the following points. (1) There is a definite purpose or ideal; (2) there is a definite plan; (3) there is a careful dispatching of the task according to the plan; (4) there is close attention to the conditions under which the task is done; (5) there is attention to the way in which the plan is undertaken and dispatched; (6) there is clear evidence of the use of common sense; (7) there is good advice; and (8) the result is superior.

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[1] *Industrial Arts Magazine*, 14:228 (June, 1925).
[2] W. F. Book, *Learning How To Study and Work Effectively*, p. 12f.

Efficient workers have a definite purpose or ideal. Purpose furnishes the drive of an efficient life like that of James J. Hill. He became a great builder of railroads because he centered his entire activity around three objectives, to earn dividends, to base the expense on the train mile, and the receipts on the ton mile. He developed the country through which his roads went, which resulted in larger shipments both ways. He lowered his rates, which increased the quantity of his shipments and consequently his ton miles. He reduced grades and curves, used heavy locomotives and increased the length of his trains, thus reducing the cost per train mile. In this way his three aims were accomplished. An eastern manufacturer has adopted this as his motto: We are not money mad. We strive to be worthy sons of the worthy fathers who started this manufacturing business two generations ago. We wish to see our employees prosperous, well-paid, not over-worked; we wish to surpass the world in the excellence of our product.[1]

Searson made a study recently of the relationship of courtesy to sales in business houses, departments and offices. He found that those lines of business in which courtesy was a well established habit far outsold other business establishments in which it was not. He grouped business concerns into four classes. Class A consisted of those that made their customers feel at home and welcome whether they bought or not. Class B consisted of those that made their customers welcome if they bought. Class C consisted of those who served their customers but treated them with a coldness that failed to attract. Class D consisted of those who gave little attention or help to customers. Stores rated A, that is, those that showed hospitality and courtesy and service to all, secured the largest per cent of net profit; they had the lowest per cent of advertising overhead, the largest relative number of capital turnover, the largest per cent of preferred customers, the longest business tenure, and the highest relative credit. Stores rated D, that is those who gave poor service and no hospitality or courtesy, had the smallest per cent of net profit, the highest overhead on volume, transient customers, and the highest per cent of business failures.[2]

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[1] Harrington Emerson, *The Twelve Principles of Efficiency,* p. 85.

[2] J. W. Searson, *The Profits of a Smile.* An unpublished report.

The significance of purpose in business may be said to be revealed in the development of dinner clubs in our country—Rotary, Lions, Kiwanis, Knife and Fork, and so on. It appears also in other fields. Charles Lindbergh, a mechanic and aviator in the United States Postal Service, conceived the idea of flying across the Atlantic Ocean from New York City to Paris on a non-stop flight. The Wright brothers before him dreamed of making flying possible. Columbus discovered the western hemisphere because he believed it possible to go to the East Indies by sailing around the world straight west. Modern ocean shipping found its inception in the dreams of Robert Fulton.

> Robert Fulton years ago
> Said he'd make the steamboat go
> And stuck to it.
> Robert's friends began to jolly,
> Called the steamboat Fulton's folly,
> But the darn thing went, by golly,
> He stuck to it.[1]

The college student who has no purpose in college beyond having a good time, spending his father's money, and loafing for four years, has failed at the beginning. On the other hand, the college student who has made up his mind as to a definite purpose in his college career has gone far toward insuring success.

Zeal brings success only if it is definitely directed, hence the importance of a plan. When Charles Lindbergh decided to fly to Paris, he did not buy the first aeroplane which he saw. Instead, he planned a plane which would as certainly as possible insure his success. He selected one of the very best manufacturers of aeroplanes in the United States. He studied and compared designs. He supervised the fashioning and assembling of every unit. He tested every piece that went into his plane. He thoroughly tested the plane itself before he attempted a flight. Then before trying the ocean he flew over land from San Diego to St. Louis, and again from St. Louis to New York in two non-stop flights. The route from New York City to Paris he carefully selected. The hours of flying he so arranged that there would be a maximum of daylight and a minimum of darkness. He made provision for every possible emergency, and he took precautions against every possible mishap. Many people have wondered why Lindbergh has been so successful in his flights, while others trying the same feats, have failed. The answer in part is that Lindbergh's flights were more carefully planned.

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[1] H. C. Spillman, *Personality*, p. 30.

A student too must plan if he is to be successful. Hours for study, for recitation, for recreation, for rest, must be carefully planned, and even the attack on each lesson. Before beginning the study of an assignment the student should say to himself, "Which is the best way to prepare this lesson?" A certain student was not succeeding well in one of her classes. The grades written on her papers were all 60's and 70's. One day she brought several papers to the instructor with the inquiries, "What is the matter with these papers? Why don't I get better grades?" An analysis revealed that the papers represented poor planning as well as poor execution. The student admitted that generally she wrote the papers without attempting to relate what she wrote to the questions asked or to the assigned reading, which in some cases she had not done. She said that she thought that if she handed in two or three pages of written material she was meeting the requirements of the lesson. The instructor showed her that the questions were based directly on the reading which had been assigned and that if she did not read the assigned references, she would almost certainly give vague or erroneous answers. In Dr. Gulick's experiment, the boy was asked to write down the plan upon which they had agreed. Architects write down every detail so that contractors will know exactly what is to be done. In the same way successful students write down their assignments and make careful notes on special instructions. While the first part of this chapter was being written, a student in one of the writer's classes came to ask about the assignment for the next recitation. When asked if she was present at the last meeting of the class she replied in the affirmative. When asked whether she wrote down the assignment she answered in the negative.

But a plan has little value unless it is dispatched properly. Just as eating is the test of a cake, so dispatching is the final test of a plan. Lindbergh not only made his plans to fly to Paris but he flew there according to plan. Railroads print time-tables and then run their trains as nearly as possible according to these schedules. To run ahead of schedule is quite as blameworthy as to run behind schedule. Train crews are checked constantly to see how closely they follow the plans which have been laid out for them. A contractor follows in great detail the plans of the architect. Salesmen are trained for days, weeks, and months to do a certain piece of work in a certain way. Efficiency in every activity of life depends not merely on good plans but on dispatching activities according to the plans.

The efficient student likewise plans his work and then he works his plan. He is punctual in all of his appointments, he undertakes each task at the appointed time and completes it according to schedule. This is not easy to do without special training. Many organizations and many persons have resorted to special devices to aid in efficient dispatching. Wholesale houses follow the practice of copying the customer's order on a dispatch sheet. As the items of the order are filled, they are checked off on this sheet. Professional men and women use a desk pad or calendar, or a vest pocket calendar in which appointments are recorded so that they may be followed in order. In factories the workers frequently receive their orders in writing. Most efficient workers make a list of the things they expect to do during the day and the success of the day is measured by their ability to "clear the calendar."

Much of the success of an undertaking depends on the conditions under which it takes place. One may make an excellent plan and be able to dispatch it efficiently, and still not achieve maximum results. Labor-saving devices and machinery have greatly increased the efficiency of the activities of human beings in the past fifty years. A generation ago a farmer had considerable difficulty in operating a quarter-section of land, while today, with improved farm machinery he can operate a whole section of land with more ease. The farmer of a generation ago no doubt made plans and dispatched them fully as well as does the farmer of today. The difference in quality and quantity of product between the farmer of that day and this, is attributable partly to improved machinery, partly to improved methods. Efficiency in factories has been increased greatly by improving the sanitary conditions under which employees work, providing medical service, rest rooms, and cafeterias, beautifying grounds, aiding employees in investment of funds, granting pensions, and so on.

In housekeeping too, efficiency has been increased, partly by improved method and partly by the invention of numerous convenient devices for saving labor. As an illustration of how much depends upon such methods and such devices—that is, upon the conditions under which activity takes place—let us imagine a hypothetical case of an inexperienced and inefficient cook who decides, without previous planning, to bake an angel-food cake. Being unfamiliar with the proper procedure her first step is to consult a cook book. Since the kitchen is not systematized she is not able to find it until a hasty search reveals its presence in the library. Turning to the recipe for angel-food cake she discovers that it calls for the whites of ten eggs, and that they must be perfectly fresh. Through lack of foresight and adequate planning she finds that the eggs that she has on hand are neither requisite in number nor sufficiently fresh. Her baking is consequently delayed by the necessity of calling the grocery store and requesting a hurried delivery of a dozen fresh eggs. Upon their arrival she discovers that the egg-beater is not in its proper place. Inquiry reveals the fact that the children, in making candy recently, broke it and the housewife has not remembered to replace it. By means of a borrowed egg-beater the cook finally mixes her cake and has it ready for the oven, only to find that the oven does not heat because of a leaky gas jet. A hasty summons to a plumber results in the necessary repair but only after considerable delay. During this interval the cake has been waiting, in increasing dejection, to be properly baked. Finally when it is placed in the oven its success as a cake is already a most dubious matter and it needs only the racing of the children through the kitchen and the slamming of doors with the consequent jarring of the range, to produce the dismal result of a fallen angel-food cake. The moral is sufficiently clear to need no pointing out.

The student too must avoid inefficiency by using foresight in providing conditions which will be favorable to his highest efficiency. Successful work cannot be achieved unless sleep, recreation, and relaxation are provided for properly. Adequate care of the body, the providing of proper light, heat, and ventilation, freedom from distractions, the presence of helpful mechanical devices—all these must be given careful thought if an individual is to become efficient in his work.

Method is fully as essential as any other element in an efficient activity. Harrington Emerson says:

> To be strenuous is to put forth greater effort; to be efficient is to put forth less effort. . . . Efficiency brings about greater results with lessened effort; strenuousness brings about greater results with abnormally greater effort.[1]

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[1] Harrington Emerson, *The Twelve Principles of Efficiency.* McGraw-Hill Book Company, Inc., p. 39.

He discusses the difference in method of living in the plant and in the animal worlds. He refers to the method of the plant world as constructive and to the method of the animal world as destructive. Plants are for the most part stationary. They wait for food and water to come to them. Their growth is greater, their life is much longer, and their products are more useful. Animals on the other hand are movable, they search for their necessities of life, they usually are destructive in doing so, their growth is relatively small, their life shorter, and their products not very useful. In the past the most efficient group life of mankind has been largely of the destructive type; but today we are realizing that life can be made much more efficient if we live constructively rather than destructively. A high degree of efficiency in the destructive aspect of human life is clearly present in our preparation for and conduct of war. This destructive aspect is apparent too, although in a modified form, in the efficiency of our machinery for the detection and treatment of crime. It is to be regretted that we are not so efficient in the positive aspect of living. We are comparatively efficient in blame and punishment but much less so in praise and reward in spite of the fact that a wide-spread application of praise may be a most effective preventive of undesirable conduct.

Good method and poor method may be distinguished in the difference between threshing by "combine," and threshing by flail; reading by groups of words, and by individual words; memorizing by the whole method, and by the part method; lighting a house by electricity, and by candles; washing with an electric washer, and by hand; toasting bread on an electric toaster, and in an oven or on a stove; making a trip by auto or by aeroplane, and with oxen; heating a house by furnace, and by a fire-place.

Experimenters have found that frequent periods of relaxation scattered through work periods produce better results than long periods of work uninterrupted by rest periods. In learning to typewrite, the touch system has been found to be far superior to the "hunt and peck" system. In every occupation there are activities which may be carried on in several or many different ways. Efficiency in a given activity means that the worker has found the way which combines ease of performance with definitely superior results. Even modern etiquette seeks to put the individual at ease in social intercourse without sacrificing the objects for which it exists.

There is also a distinct tendency in modern life to harmonize living with the demands of common sense. A generation ago women's clothing was conspicuous for tightness, and for extreme length of skirt, the former being unhealthful and the latter most insanitary. But today women's clothing is more exemplary of common sense than men's clothing. Social relationships are more democratic today than ever before. Most of the folderol of formality is disappearing in modern society. More and more "A man's a man for a' that." A study of the improved methods in other lines of human activity shows how common sense is winning its way. Automobiles for example, have lost most of the cumbersomeness and noise of two decades ago. The modern automobile possesses attractive lines, pleasing color, smoothness in operation, quietness, speed, power, comfort, and ease of operation. The hard wooden seat of the buggy is displaced by the upholstered spring-supported cushion seat of the motor car. In every field of transportation today the comforts of travel are palatial in comparison with those of yesterday. These changes were all dictated by common sense.

The student's activities must similarly exemplify the dictates of common sense. To change radically either his mode of living or thinking upon entrance to college is unwise. A student may have lived previously in an environment of bare comfort and suddenly find that he can change to one of luxury. Accordingly, he will spend money lavishly for clothing, for food, for entertainment of friends, for the purpose of making a favorable initial impression. Occasionally one will even go so far as to steal money, clothing, cars or what not in order to give an impression of wealth and independence. In the end, he cannot fail to be found out and to become the scorn of his fellows.

The efficient student uses all the means at his disposal to secure with them the best possible return. He studies his purchases, watches sales, visits shops, and examines articles of clothing or food before he purchases. He likewise watches for special opportunities to do his work efficiently. If he has a reference to read in the library, he avoids going there during the busy hours of the day, but goes during the slack hours. The writer uses Monday mornings or Saturday afternoons or evenings to do his library reading. Usually at these hours the library is almost deserted. He can get the book or magazine that he wants, and he can accomplish in a short time what it would take hours to do at a more crowded time of day. In college life, as elsewhere, common sense plays a very important rôle.

The boy who won the contest in swimming under water had accurate scientific information to aid him as well as wise guidance in using it. Good advice is sufficiently rare to be a highly prized commodity. People who can give sound advice may set their own price. While one is in health, consultation with a reliable physician is often worth more than a long series of treatments for disease later. Harrington Emerson tells of the experience of a president of a transcontinental railroad who was troubled by the flooding and washing away of his line on the slope of a foot hill. A young engineer recommended a relocation of the line at a cost of $800,000. Unconvinced of the necessity of this, the railroad president sought out an old, Irish roadmaster whom he had known well for many years. Together they went to the troublesome spot, examined it and studied it. The roadmaster suggested the construction of wing ditches and a drainage system, at a total cost of $800. The latter plan was put into effect and the trouble was eliminated at a great saving in money and effort.[1]

The story is told of an argument between the editor of a large city newspaper and the superintendent of schools in the same city. Each accused the other of having an easy job, the duties of which might be performed by any layman at a large saving of money. To settle the argument these two executives agreed to exchange offices for one day, the newspaper editor to act as superintendent of schools, the superintendent of schools as newspaper editor. The result of the experiment could have been predicted by any experienced executive. Each soon found himself in many embarrassing situations. Employees came for counsel which could not be given and which would not have been reliable if it had been given. Both were glad that the agreement extended over a period of only one day.

The efficient student seeks and listens to good advice. This is a particularly difficult task for young people, because somehow they feel that their knowledge and their sense of values are superior and need no advice from their elders. The writer once tried an experiment on a group of freshmen. He gave them an assignment consisting of five parts. A little later he repeated the assignment and asked his students if they understood it. Not one admitted that he did not. At the next meeting of the class, he asked each student to write down the five parts of the assignment. Most of them knew fewer than three. Many of them did not know even one part of the assignment in spite of the fact that no one previously had admitted his failure to understand. The efficient student avails himself of opportunities to get advice. That is what advisers are for, and that is one purpose of books, libraries, laboratories, and museums. If this advice is not helpful, one's whole college course runs the risk of failure. Fortunately the source of counsel is present; it is the student's duty to avail himself of it.

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[1] Emerson, *op. cit.*, p. 121.

No scheme of work is efficient unless the results are excellent. The "combine" is superior to the flail and the sickle, because it harvests and threshes more wheat with less effort in shorter time. Electricity is superior to the candle because it gives us better light at less cost. Dr. Gulick's boy contestant won the swimming contest. The inductive method in teaching the various steps in division is superior to the deductive method, because children learn to divide more easily, the results of their work are more often correct and the learning survives longer. The whole method in memorizing is superior to the part method in many cases because it saves time and the results are more permanent. Lindbergh's achievement accredits his plan, his means, and his method. We say he is King of the Air because he has attained with extraordinary success the ends which he sought.

So it is with all the activities of life. Given two ways of doing the same thing, that way which produces superior results is adjudged the better way. We are therefore recommending a time schedule in which hours for work, recreation, rest, meals, and all other activities are specifically provided for, because the superior results which thousands of students have obtained from such a schedule justify such a recommendation. Such a program if followed consistently, will result in the development of desirable habits in performing the varied activities of college life, in superior achievement in grades and honors, and in increase of that joy which comes from efficient living; and later, after college days are past, in the culmination of his development as an individual who can take his rightful place among his fellows as a good citizen, a desirable companion, and a successful man or woman.

To be an efficient student, then, one should (1) have a definite purpose or ideal; (2) have a definite plan for each of his activities; (3)

dispatch his plan properly; (4) pay close attention to the conditions under which he works; (5) study the methods by which he works; (6) use the good sense which he has inherited and developed; (7) seek and follow sound advice; and (8) be satisfied only with the very best results which he is capable of achieving.

Making and Using a Time Schedule

The time schedule constitutes a plan for living efficiently. It is particularly important to make such a schedule at the beginning of one's college career because the first few weeks mean so much to one's immediate and future success. The student should study the sample schedule on page 33 made and followed by a college freshman. Then he should make one of his own, following the form on page 33. On this schedule he should provide for all the activities of each day and week. These will include classroom work, preparation for classes, recreation, rest, meals, outside work, personal attention and emergencies.

In assigning his various activities to definite periods of time, the student should proceed as follows:

1. He should schedule all fixed class periods first, including recitation, lecture, laboratory and library periods, hours for meals and all specified hours in which work is done for others. If one plays on an athletic team, these fixed hours also should be scheduled.

2. He should provide for periods of preparation for classes. As a rule preparation should come as soon after the class as possible. Most students, unfortunately, wait as long as possible instead. This is a bad practice. If the preparation for the next class is made soon after class, assignments will be recalled more readily, connections between the lesson immediately past and the next one will be perceived more easily, a quick review just before class will fix the learning much more effectively, and the temptation to study lessons for succeeding hours during class periods will be removed. As a rule, two hours of preparation are required for each hour of class work. A class that meets three hours each week demands therefore, six hours of preparation.

3. He should provide for recreation and rest of the mind and the spirit as well as of the body. In most colleges extra-curricular activities are sufficiently numerous that students early find themselves engaged in some regular recreation. If the student does not play on an athletic team or if his college does not provide regular physical exercise,

SAMPLE TIME SCHEDULE

Name____

First Semester, 1927-1928

A. M.	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
12– 7	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep
7– 8	Dress; Breakfast	Dress; Breakfast	Dress; Breakfast	Dress; Breakfast	Dress; Breakfast	Sleep	Sleep
8– 9	German	German	German	German	German	Dress; Breakfast	Dress; Breakfast
9–10	Study	Study	Study	Study	Study	Clean House	Undesignated
10–11	English	Education	English	Education	English	"	Sunday School
11–12	Music	Study	Music	Study	Education	Shop	Church
P. M. 12– 1	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Undesignated
1– 2	Study	Geography	Study	Geography	Recreation	Wash and Iron	Dinner
2– 3	Geography Laboratory	Physical Education	"	Physical Education	Study	Study	Undesignated
3– 4	"	Recreation	Recreation	Rest	"	Emergency	"
4– 5	"	Study	Study	Study	Rest	"	"
5– 6	Physical Education	Write letters	"	"	Study	Rest	"
6– 7	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	Recreation
7– 8	Study	Study	Study	Study	Date	Party	Young People's Meeting
8– 9	"	"	"	"	"	"	Church
9–10	"	"	"	"	"	"	Recreation
10–12	Sleep	Sleep	Sleep	Sleep	"	"	Sleep

NOTE: This is the schedule of a highly successful college student. The reader should notice the care with which all the elements suggested in the text have been provided for.

he should select some one sport, or a few sports from golf, tennis, bowling, hiking, archery, basketball, volley-ball, skating, swimming, and the like, and engage in it or them as regularly as possible. Fortunately most of our American colleges provide opportunities of this kind and students should not hesitate to make use of them. There is a distinct tendency to help students become proficient in sports which they like and will continue after their college years.

Recreation of mind is no less important. Books, magazines, plays, shows, musical entertainments, visits to museums and picture galleries, radio, lectures, debates, literary societies—from sources such as these the student may obtain recreation of mind. The object of this recreation should be a genuine enjoyment of life in its varied aspects. Not only should he respond to the stimulation which such kinds of recreation afford, but he should also attempt to contribute as he can to the enjoyment of others. Recreation of the spirit is fully as important as recreation of body and mind. Present day education strongly emphasizes the necessity of developing the appreciative, the spiritual, aspect of life. Churches, fraternal organizations, Y. M. C. A., Y. W. C. A., and the Volunteer Band, are a few of the organizations which exist to offer an opportunity for spiritual recreation. The weekly schedule should provide definite periods of time for these three recreational needs. The amount of time devoted to each will depend somewhat on the likes and dislikes of the individual student.

Rest must also find a very definite place in the program. Rest includes short periods of relaxation during each day. Such periods should come immediately before and after meals, between classes, and during extended periods of effort. We shall show later that a short rest of ten minutes within each hour of the day will greatly increase efficiency during the remainder of the hour. The amount of sleep which should be scheduled depends on the individual student. Some students get along well on four or five hours of sleep daily, others need as much as nine or ten hours. Each student should study himself to determine the amount of sleep which he needs to keep him most efficient.

4. He should provide for emergencies since the unexpected happens frequently to disturb the routine of a regular life. The efficient student is one who can adjust himself and his program to an unexpected interruption. Seldom are successful people much disturbed by emergencies. A student can provide for them in several ways. He may set aside a

small amount of time in the schedule each day and mark it specifically for emergencies. A better way perhaps is to pad the time of one's program of recreation thus making it possible to take the full time if no emergency arises and to reduce it without harm if an emergency does arise. Still a third way is to determine which of one's activities is least important in any particular day and use the time scheduled for it for any emergency that may arise. A fourth way is to speed up the activities of the day, thus finishing them in a shorter period of time than usual. The student should note that we have been careful not to suggest a reduction of sleep nor an interruption of the important activities of the day. Work, recreation, and rest must always have first place in every student's program. Frequently students skip classes, reduce hours of sleep, neglect their class preparation or decrease their hours of recreation in order to take care of an emergency. These should not be sacrificed for emergencies if it can possibly be avoided.

5. He should see that his program is well balanced. If the suggestions given thus far are followed, all of the hours of the weekly program will be assigned. The student should now study his program to make sure that it is balanced well. Each day should have a fair representation of work, recreation, and rest. As nearly as possible class-work should be distributed evenly through the school week. Sometimes, of course, this is impossible. Periods of preparation should also be distributed well. Some students idle away the hours of the afternoon and then expect to get three or four lessons in the course of a single evening, a goodly portion of which should be spent in recreative activities. The schedule should show a proper balance with periods of work and periods of play, periods of mental activity and periods of physical activity. Reading should alternate with writing, thinking with memorizing, intensive study with some less strenuous mental activity.

The student should take especial care to make Saturdays and Sundays fully as profitable as school days, although probably in a different way. Most students who find it necessary to use Sundays to prepare their lessons for the ensuing week reveal an inefficiency in the proper use of their time during school days. Sundays should be spent largely in recreation. It has been demonstrated that factory employees do more and better work by working only six days each week than by working continuously seven days each week. Animals, such as horses, function more efficiently if there are intervals of rest. Even machinery has been found to do the same. Emphasis on recreation and rest does not imply that the hours of Sunday are to be spent in making up lost sleep or to be dissipated in idle conversation. One's activities on Sunday should be quite as purposeful as those of any other day, but the emphasis should be on purposeful recreation and rest, and not on purposeful work. Much emphasis should be placed on the cultivation of the aesthetic and the spiritual aspects of life. Sunday should be a day for making new friends and visiting old ones, for bringing cheerfulness and encouragement to those who need it, for enjoying the beauties of nature and art, for attending church if it is one's custom, and in short, for cultivating the beautiful and the good.

6. He should alternate activities of different kinds so as to vary his daily program. A word should be said at this point about the best time to engage in our activities. Many people assume that sleep just before midnight is better than sleep at any other period of the day. There is a German proverb which asserts, "Morgenstund hat Gold im Mund," meaning that morning hours are golden. Ingalls made popular the saying that opportunity comes but once to knock at each man's door. Experiments indicate that these and similar notions are misleading. For the most part it is true to say that the best time for activity is *now*. Gates tells of an experiment to test physical and mental efficiency at different hours of the day. He says:

> A group of college students was tested at all hours, except noon, from eight A. M. to five P. M. An interesting feature of this investigation was the disagreement between the distribution of actual ability and the distribution of self-judged ability. Most students were quite mistaken about the hours of their maximum efficiency, doubtless because they were misled by feelings of fatigue which were often most acute at the periods of highest efficiency. One thing is quite certain: the ordinary work of the school day is not so severe as to reduce efficiency perceptibly. In fact, achievement is higher at nearly every hour than it is at the beginning of the day. In the main, the differences are small.[1]

The alternating of activities is, therefore, much more important than the scheduling of work, recreation, or rest at particular hours of the day. The main thing is that there should be provision for all of these activities and that they should bear the proper relationship to each other.

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[1] A. I. Gates, *Psychology for Students of Education.* Copyright 1925 by The Macmillan Company. Reprinted by permission. Pp. 383-384.

7. He should undertake, after his schedule has once been made with care, to put it into operation. A plan has little value unless it works. Many people make excellent plans for life, although they actually may live quite differently from their plans. In order to make sure that the time schedule works, the student should occasionally keep a detailed record for a week and then compare his plan with his practice. If the two compare favorably, the plan is good at least in so far as it is workable. The student should not assume, however, that the quality of a plan may be determined by its workability. The final criterion of the quality of any plan is the results which come from following it. The student should therefore pay more attention to the results of his activities than to a slavish adherence to his plan. He will find probably that he has assigned too much time to some activities and too little to others. This will necessitate an adjustment. In making this adjustment, the student should be careful not to take so much time from any one of the three major activities—work, recreation, rest—as to cripple it. There is a limit beyond which the student must not go. If work demands so many hours that time for recreation is reduced materially or eliminated entirely, or if hours for work are increased at the expense of hours for sleep, he should lighten his work load.

His plan can be followed more easily if the student will make a point of going promptly at the task which is set for a specified time. He must remember that he is developing habits which may result in success or failure in life. The ability to set a task for a given time and to do it efficiently at that time is a mark of the successful individual. Doing the task when one says he is going to do it is an invaluable trait to cultivate. Whipple goes so far as to assert that every student should develop not only a time habit, but a place habit as well. "Have a particular place—a particular desk, a particular chair—at which you study," he says.

8. He should invest every hour of the day. The inefficient person usually loafs a great deal. Loafing is merely another name for idleness, and continued idleness is "the delight of the devil." A little observation will convince one that students waste time. Hours between classes are often fooled away in idle conversation or daydreaming. These brief periods between classes may well be devoted to settling many of those important things which one student must discuss with another; in this way even these small parcels of time may be put to use. It not infre-

quently takes an hour or a goodly portion of one for an inefficient person to make a start at a task. The late afternoon hours, if not scheduled for definite activities, are frequently permitted to pass without being put to any use. Often too much time is wasted in looking up references, collecting materials for work, worrying about things which cannot be helped. The student should guard against such time-wasting activities and should invest his time for larger profits.

These suggestions do not imply that the student should be forever at work on his school tasks. In suggesting the elements which should be provided for in the schedule, we emphasized the need for recreation, relaxation, and rest. In the normal student life, there must be abundant opportunity for fun, and most of the fun comes from associations with fellow students. Definite time should be scheduled for such associations. For many students, college years are mating years. To select a suitable life partner is quite as important as any other college activity. It is, therefore, legitimate for a student to include in his time-schedule hours for social activities. Without them much of the attractiveness of college life would be lost.

The efficient student knows how to do his work well, he finds time for physical, mental and spiritual recreation, relaxation and rest; and yet he still has a world of fun, more fun in fact than his fellow student has who pretends to be tremendously occupied but really accomplishes little. In budgeting his time then he should (1) provide for his fixed activities first; (2) schedule his periods of preparation for classes; (3) provide for recreation, relaxation, and rest; (4) provide for emergencies; (5) arrange a well balanced program of work, recreation, and rest; (6) alternate activities of different kinds to vary his program; (7) put his schedule to work, modifying it from time to time to meet his needs; and (8) guard against wasting time.

KEEPING A FINANCIAL ACCOUNT

For most freshmen the responsibility of making all purchases for the necessities of life is something new. Unless there has previously been some training in the spending of money there may be much waste. The student should therefore purchase a small account book, which should be always on his person. It is now possible to buy a combination calendar and account book for a dime. In this book the student should record all his appointments as well as all moneys received and expended.

PART OF A FINANCIAL ACCOUNT OF A COLLEGE STUDENT

1. A portion of the itemized February account.

Date	*Money received*		Date	*Money expended*	
	Balance	3.00	Feb. 1	Lunch	.25
Feb. 1	Check	42.80		Car fare	.30
" 8	Check (scholarship)	25.00		Stamps	.10
			" 3	Lunch	.25
				Paper	.30
				Fee for Society	.50
			" 7	Car fare	.30
				Dues—sorority	6.50
				Board and room	29.25
			" 10	Staff dinner	.50
				Thread	.05
				Lunch	.20

Subsequent entries for money expended not given.

2. A summary of expenditures for February.

Money received		*Money expended*	
Balance	$ 3.00	Lunches and dinners	$ 4.75
Check	42.80	School supplies	1.25
Check (scholarship)	25.00	Dues—sorority and other organizations	7.50
		Board and room	29.25
		Car fare	1.50
		Clothing, etc.	22.35
		Incidentals—movies, candy, etc.	4.00
		Balance	.20
	70.80		70.80

At the end of each month he should send a copy of his financial account to the person who supplies his funds. This will help such a person to examine the expenditures and give him an opportunity to offer helpful advice to the student for improved expenditure. It will also show an appreciation on the part of the student for his financial aid, and it will give him excellent training in handling money.

When money is received it should be deposited in a bank. The student's faculty adviser should be consulted about a suitable bank. All small items should be paid in cash although large sums of money should not be carried. Larger items, such as board and room, should be paid by check. Checks should be numbered and an accurate record of each check should be kept on the stub in the check book. When a copy of the account is made, the amounts spent for various items should be studied. It may surprise the student to find how much he has spent foolishly and how little wisely.

A successful business man makes a budget and then operates his business according to the budget. After a student has been in college for several months, making a budget becomes an interesting practice. It sets a limit to the expenditure of money for all items and encourages him to stay within such a limit.

Some students are constantly borrowing money, clothing, pencils, paper, and other articles from their friends and neighbors. This is a bad practice. It reveals a lack of business sense. If it is necessary for a student to borrow money for any purpose he should go to his bank and make it a business-like transaction as others do. If he really needs a thing it should be bought or rented, but not borrowed. He should also use care in buying on the installment plan. A purchase on such a plan is wise only if the article is needed and if he is certain that it can be paid for in due time.

Students can greatly increase the purchasing power of their money if they will study values and make it a point to get their money's worth. Crawford makes the following suggestions in regard to this:

> Compare relative values of articles before you purchase. Buy necessities first, and educational or school necessities first of all. Don't economize by doing without books, tools and needed school equipment. It is false economy to do so. Get good quality of goods, even though it costs more; it pays in the end. Ask the price before buying, whether you are buying goods or membership in organizations. Pay your fixed charges, such as room and board, in advance. Buy a reasonable supply of recreation, it is a necessity. Don't run with the rich crowd—you won't be able to keep up. Be honest and admit poverty, instead of going under false pretences. Remember where the funds you are spending have come from. Don't raise your standard of living unless you

are sure you can keep it up, because it is very hard to go back to a lower standard when once you are accustomed to the higher one. Keep busy and you will not spend so much. Avoid unnecessary habits of spending, such as eating between meals, and treating your friends. Always keep an emergency reserve on hand, and if you have funds above the needs of the current month, keep them in the savings bank where they will be free from your check, and where they will earn a small amount of interest.

There are some specific suggestions for reducing the expenses of college life which may be worth considering at this point. Patronize second-hand book exchanges. Take good care of books so that they will bring good second-hand prices. Be careful with your books, pens and supplies, to avoid losing them. Secure a locker at the University in which to keep your property in order to avoid loss or theft. Repair things before they are ruined. "A stitch in time saves nine." Buy paper by the ream instead of by the tablet. Buy ink in a large-size bottle that will last you all the year. Use one loose-leaf notebook for all of your courses. Have plain, unruled paper cut up into 3 by 5 cards, instead of buying stiff cards at the book store. Use these cards for scratch purposes, instead of wasting large sheets. Use an eversharp pencil instead of the old-fashioned wooden ones. Use fountain pen and ink wherever possible in preference to pencil. Avoid waste, whatever its form and magnitude, and consider it a crime.[1]

Some students find it necessary to pay part or all of their expenses while going to college by doing outside work. In most of our western universities the percentage of such students is increasing. There are certain advantages to be derived from working one's way. Helping to provide the necessities of life not only develops a sense of responsibility but it keeps one occupied, it helps to develop habits which are conducive to success, it stamps one as a responsible individual and it develops a sense of independence. When a person earns the money he spends, he is usually more careful about how he spends it. Students who come to our summer sessions usually work more intensively, are more alert, spend less money and get more for what they do spend than students whose study is done during the regular school year. This is because the latter receive most of their money from parents or guardians, whereas summer school students are for the most part spending their own money which they have earned and saved at great sacrifice.

If the student works for money he should make it a point to do his work well. He should for the time being forget about his college classes and give his employer a full measure of his attention. Then when he returns to his class work, he should forget about his outside job, and give his studies full attention. This practice is helpful in developing an ability to concentrate on the work at hand. Such an ability is particularly important in a life which calls for a constant shifting from recitation work to study, to reading, to physical exercise, or to other activities.

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[1] C. C. Crawford, *Methods of Study*, p. 19f.

There are objections, of course, to dividing one's time between college work and an outside job. For one thing his attention is of necessity divided. One finds himself more or less in conflict between the duties of his college and his outside work. The student who is not strong-willed is inclined to neglect the one or the other, and often both. Sometimes too, outside work is so exacting on one's strength or talents that he is exhausted when class work comes up for consideration. Outside work may even become so remunerative or enjoyable that interest in class work is permanently lost and the student drops out of college at a time when he should not do so.

Students frequently wonder how they may secure work to help them pay expenses. It is wise to register with the Student Employment Agency, the Y. M. C. A. or Y. W. C. A., the Dean of the College or the Dean of Men or of Women, and the Placement Bureau. The city Y. M. C. A., Y. W. C. A., some of the dinner clubs, the Chamber of Commerce, and the Social Welfare Agency are other organizations which assist in locating employment for students. The student should also inform his friends of his desire to find work. If he has special ability he should leave his name, address, and telephone number with firms which employ persons with such abilities. Crawford mentions several desirable features to be sought in a job. He says:

> Work close to the campus or to your residence is desirable. Work that can be done in the late afternoon hours should be chosen in preference to morning work. Work which requires only a few hours a day and which can be done according to a definite schedule is preferable to irregular work or long hours. Work which is different from your school tasks will provide more relaxation. Work which does not leave you physically or mentally tired out, or work which you enjoy and can be interested in should always be chosen in preference to drudgery. But, above all, the financial rewards and the educative value of the job should be the determining factors.[1]

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[1] Crawford, *op. cit.*, p. 20.

SUMMARY

Time is the one commodity of which all of us have an equal amount. The story of man's progress, both as an individual and as a race, shows that efficient utilization of time means successful achievement. Efficiency consists largely in the ability to achieve superior results with a minimum expenditure of effort and time. The efficient individual exemplifies several definite qualities. One of these is an ability to analyze his tasks, to schedule them in terms of time units, and to dispatch his plans under favorable conditions and by improved methods. Students should schedule their time and keep an account not only of the results of their activities involving work, recreation and rest, but also of their money receipts and expenditures.

QUESTIONS

1. In what respects do the statements by Percival White and Arnold Bennett agree?
2. What do we mean when we say that people "waste" time? How may time be wasted?
3. Define efficiency.
4. What are the essential qualities of an efficient performance? Give an example of each of these qualities.
5. What advantages do you see in making and following a time schedule? What objections can you advance?
6. How should a time schedule be made?
7. Why should a college student keep a financial account?
8. How may a student determine whether he is spending his time, his effort or his money to the best advantage?

EXERCISES

1. Describe some efficient person with whom you are acquainted. Which of the qualities mentioned in this chapter does this person exemplify?
2. Visit a large business establishment and look for evidence that it is run on a time schedule.
3. Interview an efficient man or woman in your circle of acquaintances and discuss the value of a time schedule.
4. Make a time schedule using the model on page 45. In filling out the schedule follow the suggestions made in this chapter. Show your schedule to your adviser and ask for suggestions. Have some successful man or woman also examine your schedule.
5. Find out how generally people keep records of their receipts and ex-

penditures. Does there seem to be any relationship between success and keeping a record of one's finances?

6. Of what value is a budget in business? In government? Does our government operate on a budget? Does your state government? Is your home operated on a budget?
7. If you have not kept a financial account before coming to college purchase a small account book and begin a careful record of your receipts and expenditures. Blanks for recording financial items are ruled uniformly as follows: the left-hand columns for receipts, the right-hand columns for expenditures. Follow the plan used by the student who submitted the account on page 39.
8. List the suggestions which Crawford makes under the heading of "Financial Adjustments," and also under the heading "Time Adjustments." (Sel. Ref. 3.)
9. In his study of the successful and unsuccessful procedures in the business world Harrington Emerson found a striking uniformity in the causes that make for success as well as in those that make for failure. In his *The Twelve Principles of Efficiency* he summarizes what he found. (Sel. Ref. 4.)
10. What evidence does Headley produce to show that men and women may achieve eminence early in life? (Sel. Ref. 5.)

SELECTED REFERENCES

1. Bennett, Arnold. *How to Live on Twenty-Four Hours a Day.* Doubleday, Doran and Company, 1910. The whole book may be read in an hour. It contains some excellent suggestions on how to increase the efficiency of living.
2. Book, W. F. *Learning How to Study and Work Effectively.* Ginn and Company, 1926, pp. 4-13, 32-38, and Chapter X. The student will find here a discussion of the factors which determine efficiency. Suggestions are made also on how to make the most effective use of one's energy and time.
3. Crawford, C. C. *Methods of Study.* Published by the Author, 1926. Chapter II: "Working Conditions."
4. Emerson, Harrington. *The Twelve Principles of Efficiency.* McGraw-Hill Book Company, 1924. A discussion of the reasons for success and failure in business.
5. Headley, L. A. *How to Study in College.* Henry Holt and Company, 1926. Chapter XIV: "How to Invest Time." Emphasis on the value of time and suggestions for making a time schedule.

6. Kitson, H. D. *How to Use Your Mind.* J. B. Lippincott Company, 3d ed., 1926, pp. 22-23, 28-29. A discussion of the need for a time schedule.

TIME SCHEDULE

Name______________________________________

Date________________________________

A. M.	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
12– 5							
5– 6							
6– 7							
7– 8							
8– 9							
9–10							
10–11							
11–12							
P. M. 12– 1							
1– 2							
2– 3							
3– 4							
4– 5							
5– 6							
6– 7							
7– 8							
8– 9							
9–10							
10–12							

CHAPTER III

THE SIGNIFICANCE OF PERSONALITY

Why am I going to college? This is a question which every college student should ask himself at the beginning of his college career. The answer to this question should constitute the aim of his college education.

Why 411 Freshmen Came to College

In the fall of 1926, 411 freshmen in the University of Nebraska were asked to state what were their reasons for coming to college. Their answers are tabulated below. Most of these young people gave more than one reason for coming. Many of them demonstrated by their answers that they had given serious consideration to the purpose of a college education.

The first and largest group of the 411 students said that they had come to college to learn to make a living, to get a profitable job, to find a profession, to develop their abilities, to increase their productive power, to be useful, or simply to prepare themselves for a satisfactory vocation. Some of them frankly realized the necessity of meeting the competition of modern life.

Why 411 Freshmen Came to College

1926-1927

Purpose				
I.	1.	To make a living—to prepare for a profession....	109	
	2.	To be a good teacher........................	108	
	3.	To be useful	15	
	4.	To get a profitable job — to make a respectable and dignified living	5	
		Total		237
II.	1.	To get an education or higher education.........	119	
	2.	To develop abilities	19	
	3.	To obtain knowledge	13	
	4.	To meet people of similar or conflicting opinions.	9	

	5.	To associate with keener minds and with people of new ideas and ideals	5	
	6.	To develop the mind	4	
		Total		169
III.	1.	To be successful in life, in business, in one's vocation or in social affairs	103	
	2.	To be independent	20	
	3.	To increase productive power	17	
	4.	To meet the competition of life	13	
	5.	For personal advancement	4	
	6.	Needed hours to get a certificate	4	
	7.	To achieve fame	2	
		Total		163
IV.	1.	To enjoy life	47	
	2.	To make friends	46	
	3.	To enjoy the social side of college life	35	
	4.	To get along with people	7	
	5.	To experience the fascination of college life	4	
	6.	To have a good time along with work	2	
		Total		141
V.	1.	To learn to live—to become cultured	48	
	2.	To develop higher ambitions and ideals	30	
	3.	Service	16	
	4.	To develop a broader outlook	12	
	5.	To appreciate the finer things of life	9	
	6.	To build a character or personality	5	
	7.	To live on a higher plane	5	
	8.	To develop keener insight into life, nature, and human nature	4	
	9.	To develop mentally, physically, and spiritually	4	
		Total		133
VI.	1.	To please parents ... Total		17
VII.	1.	To develop into a good citizen ... Total		12
VIII.	1.	To have something to do—it is the popular thing to do, friends are coming	7	
	2.	To find diversion	2	
		Total		9
IX.	1.	To invest abilities ... Total		2

NOTE: Each figure in the first one of the two columns on the right-hand side indicates the number of students who gave the reason stated. For instance, 109 students said that they came to prepare specifically for a profession. The larger numbers at the extreme right—the totals—indicate the total number of students who gave as their reasons for coming to college any of the purposes set down in groups I, II, III, IV, etc., at the left.

The second group in point of size said that they came to college to get an education, generally implying by this that they meant a continuation of the education which they had begun in elementary and secondary schools. A few said that they meant by an education a development of one's mind, or of one's abilities. Some felt that education would result from contact with people of keener minds, who would put them in touch with new ideas and ideals. Most of the statements were undefined. So much has been said in recent years about the value of an education that there are not a few persons who believe that being in college for a number of years develops a mysterious power which bestows upon an individual advantages which he cannot secure in any other way.

The third group in point of size indicated that the purpose of their coming to college was to be successful (1) in life, (2) in business, (3) in the social affairs of life. Two students indicated that they were coming to college as an investment. Twenty of them gave a desire for independence as their reason. Seventeen said that they had come in order to increase their productive power, and four of them said that they had come for their own advancement.

The fourth group in point of size gave as their purpose to cultivate the social side of life. Many students said that they came to have a good time. Most of them explained that while their primary purpose in coming to college was vocational or cultural, or both, they were interested too in the social affairs of college life. Many looked forward with eagerness to the new contacts which they would make during their college years. To make new friends and to learn how to get along with people generally, to have a good time along with their college work and particularly to enjoy life to the full, were explanations given by a relatively large number of students. This sentiment evidently is sane. There was not much evidence of a desire to lead a butterfly type of social life. Apparently students have discovered that college life, after all, is not a mere revel. With the introduction of prognostic tests as well as with the attempt to help students fit themselves for suitable vocations, loafing in our American colleges has been reduced considerably. Soon it need no longer be said of any student that "it is better to have come and loafed than not to have come at all."

The fifth group in point of size gave as their purpose the desire for a richer life. Those who criticize the ideals of the youth of today will find food for thought in the large number who said that they came to college to become cultured, to have mind and spirit liberalized. To learn how to live, to develop high ideals, to build character or personality, to develop all-around ability, to appreciate the finer things in life, to develop a keener insight into life, into human nature, and into the facts of life, to gain a broader outlook and to live on a higher plane—these are the specific objectives mentioned by this group as those which they hoped to attain through a college education. While a majority of the 411 freshmen emphasized the importance of developing an ability to make a respectable living, this fairly large group emphasized quite as much their desire to learn how to live on the very highest plane of modern life.

A sixth small group said that they had come to college because their parents wanted them to come. Many young men and women are reared in homes where one or both parents are college bred. In such a home it is usually assumed that all the children will go to college. Students coming from such homes frequently assert that they never seriously thought of doing anything else.

A seventh small group came to college because their fellow pupils or their friends were doing so. Just as many people buy articles of clothing or food of a particular kind or brand because their friends are doing it—not because they really need it or can afford it—so many young people go to college because it is the popular thing to do. It is not many years since going to college was an unusual thing, but today it is becoming increasingly common. The actual number registered in our colleges has mounted to more than six hundred thousand. Many communities are establishing junior colleges; others are increasing the endowment and facilities of colleges and universities already established. In all probability the number of young people who will attend college in the future will be even larger than at present.

The eighth group, exceedingly few in numbers, said that they came to college to win honor or fame, riches or some other advantage in life. Some boys came with the express purpose of playing on some athletic team or of becoming a member of some particular organization which would bring them fame, honor, or social prestige. It is interesting to note that in the group of students who made known their reasons for going to college, only two indicated that they came to achieve fame. Apparently our young men and young women realize that fame is not won easily. It is not a mere matter of appearing before a public that is anxious to applaud superior achievement. Men and women who have achieved fame have done so at the cost of tremendous sacrifice, ceaseless effort, and remarkable courage. In practically every case where young men or young women achieve fame early in life, they do so either because they themselves have labored long and untiringly, or because they are reaping the benefits of the hard work of others. The proverbial assertion that "there is no royal road to learning or success" is just as true today as it ever was.

In the last small group a few students indicated that they came to college that they might develop into good citizens. It is probable that all of these 411 students wish to be good citizens even if this purpose was not stated specifically in each case. One student expressed his thought thus:

> I want an education because I believe that in this age of higher learning and keen competition a person with a college degree is going to be the one who makes something of himself. If the world is to continue to progress in science, art, literature and industry, there must be more college graduates. Unless every individual makes it his definite aim to secure as much education as possible, the standards of our country in an intellectual way will be lowered.

To develop loyalty to our country and to learn its problems, to acquire a respect for authority, and to learn how to get along with one's fellows—these were the directions in which some students desired to develop good citizenship.

If one may judge college students generally by the group studied here, we are justified in believing that most of them are serious-minded in their estimate of the value of a college career. Let us attempt now to determine whether these purposes which college freshmen give are worthy of acceptance or whether they are the idle dreams of youth.

Does a College Education Pay?

Many arguments may be advanced in favor of a college education. Proof of the statement that a college education increases one's chances for success is written large in the recent digests of the educational training of the men and women whose names appear in *Who's Who in America.* The latest tabulation[1] shows the following classification:

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[1] "Educational Statistics. . . . Based on the Edition for 1922-23," in the Introduction to *Who's Who in America* for 1926-1927.

No educational data furnished	1,814
Self-educated or privately educated	388
Common school education	1,880
High school graduates	2,756
Attended college but not graduated	3,022
College graduates	14,055
Total	23,915

According to these figures 63.67 per cent of the men and women whose names appear in *Who's Who in America* are college graduates, while 13.69 per cent attended college but did not graduate. In short, slightly more than three-fourths—77.36 per cent—of the significantly successful men and women in America have either attended college or are college graduates. These figures show that while only nine out of every one hundred of these men and women had no more than a common school education, sixty-four out of every one hundred had a completed college education, and seventy-seven out of every one hundred had some college education. Translated into terms of chance, these figures mean that the college graduate has seven times the chance to become eminent that his brother with only a common school education has, and two times the chance to be eminently successful that the non-college man or woman has.[1]

Ellis calls attention to the slight chance which the man who is uneducated as measured by our school standards, has for eminent success. Out of the nearly five million uneducated men and women in America, only thirty-one have been sufficiently successful in any kind of work to obtain a place among the leaders catalogued in *Who's Who in America*. That is, only one out of every one hundred fifty thousand was eminently successful. The thirty-three million men and women with a common school education had four times the chance to attain eminence that the uneducated men and women had, the two million high school graduates eighty-seven times, the one million college bred men and women eight hundred times.[2]

Thwing in 1908 studied the income of 15,142 eminent men and women in Appleton's *Encyclopedia of American Biography*. He found that there were 352 times as many college bred men who became Representatives in the National Congress as non-college men, 530 times as many who became United States Senators, and similar proportions of college men to non-college men in various other fields. From this study he found also that more than 75 per cent of those successful in all lines of work were college bred men and 58 per cent were college graduates.[1]

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[1] *Who's Who in America*, pp. 27-29.

[2] A. C. Ellis, "The Money Value of Education," *Bulletin of the United States Bureau of Education*, 1917, No. 22, p. 15.

A comparison of the educational statistics in *Who's Who in America* for 1899-1900, 1910-1911, and 1922-1923 shows that there is an increasing percentage of college bred men and women among those who achieve eminent success. In 1899-1900, 53.12 per cent of the men and women in *Who's Who in America* were college graduates; in 1910-1911, 54.96 per cent; in 1922-1923, 63.67 per cent. In 1899-1900, 70.34 per cent had attended college or had graduated from college; in 1910-1911, 71.10 per cent; in 1922-1923, 77.36 per cent. Increasingly, eminent success in life implies a college education.[2]

It can be demonstrated, too, that a college education increases the chance of financial independence. Ellis shows that those nations which have fostered education are the leading nations of the world today, whereas those nations which have neglected their education are today the weak nations of the world. Germany with good schools, although decisively defeated in the recent war, is recovering remarkably fast, has already been admitted to the League of Nations, and is again on the threshold of an era in which she will command the attention of the leaders of the world. Russia, with more resources than Germany, but with poorer schools, is today in a state of chaos with no apparent national or international leadership. Measured in terms of resources and opportunities, Russia should be far in advance of Germany, but the opposite is true. The absence of wide-spread education in Russia is the explanation.

Similarly Japan, confined to a small territory with few resources and opportunities but with good schools and a negligible amount of illiteracy, holds a prominent place among the leading nations of the world, while China with a vast territory, with boundless resources and opportunities, but with poor schools and an enormous amount of illiteracy has for a century been the football of the nations of the world. The present awakening in China may be attributed directly to the effective work of American college graduates who have gone to China as missionaries and to the young men and women of China who have secured a college education in American, European, and Chinese universities. Ellis says:

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[1] *Ibid.*, p. 17.

[2] *Who's Who in America* for 1899-1900, p. xi-xii; 1910-1911, p. xxif.; 1926-1927, p. x.

> The illiterate race is necessarily restricted to the bullock and the stick plow, while the educated nation mines and smelts ores, manufactures the reaper and the traction engine, fertilizes the soil, rotates crops, breeds better stock and better seeds by scientific methods, rises superior to flood, drought, and disease, and multiplies efficiency a hundredfold.[1]

What is true of nations is true also of individuals. Dean Lord of Boston University finds that the average total amount that has been earned at the age of sixty by the untrained man is $45,000, by the high school graduate at the same age, $78,000, and by the college graduate at the same age, $150,000.[2] These figures indicate that the cash value of a college education is $72,000. Foster shows that the correlation[3] of per capita wealth in 1922 with expenditure for education per capita in the United States, on the basis of its total population, was .8454. The correlation of per capita wealth with expenditure for education per capita on the basis of population from five to seventeen years of age was .9014. These correlations are high. Foster continues:

> Every state which spent more per capita for education than the mean for the United States in 1910 had less than the average percentage of illiteracy, and every state, except two, spending less than the average in 1910 had more than the average percentage of illiteracy in 1920.

He shows, too, that the correlation of the rank of the various states in per cent of illiteracy with expenditures for education in 1920 was .7381. Further, a small group of states which in 1900 spent $4.60 per capita for education, in 1919 had an income of $799 per capita, while a similar group of states expending only ninety-eight cents per capita for education in 1900 had an income of only $417 in 1919. California ranked first in expenditures for education with $25.30 per capita, and sixth in wealth with $4007 per capita. Arkansas ranked forty-eighth in expenditure for education with $4.91 per capita, and forty-fifth in wealth with $1439 per capita. In conclusion Foster says:

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[1] A. C. Ellis, *op. cit.*, p. 11.

[2] "Money Value of a College Education," *World's Work*, 49:240-241 (January, 1925).

[3] The term "correlation" is used to show the relationship of two or more facts. Perfect positive correlation is +1.0. Perfect negative correlation is —1.0. Usually a correlation of .75 or above is very good.

> Those states having the highest per capita income are the ones which spent most per capita for education ten or twenty years before. Evidently this previous educational expenditure had some effect upon the per capita income. Education does not supply natural ability, but merely develops it. The educated man or woman has a wider field of opportunity and has a better chance than the untrained individual of equal ability. More people with education achieve success than do those without such training.[1]

Ellis showed more than a decade ago how essential higher education is for the welfare of a people. He says:

> The efficiency of an illiterate people in competition with an educated nation is as the crooked stick against the sulky plow; the sickle against the reaper; the bullock cart against the express train, the ocean greyhound, and the aeroplane; the pony messenger against the telegraph, telephone, and wireless; the individual harangue against the printing press, the newspaper, the library; the spinning wheel against the factory; the pine fagot against the electric light; the peddling of skins and herbs from the ox cart against the bank, the check book, the railroad, the department store; the log hut against the steel skyscraper; the unaided eye against the microscope and telescope; incantations and magic against the chemist, the hospital, the modern physician and surgeon. Take away from one entire generation all education, and society must revert to the stick plow, the ox cart, and such primitive means, because steel implements, locomotives, steamships, electricity, telephones, telegraph, waterworks, steel buildings, mining and chemical industries, factories, modern sanitation, hygiene and medicine, books, newspapers, courts of justice, and laws that protect property and defend the rights of the weak are all impossible without education and are efficient only in proportion as educated intelligence is applied to them.[2]

Although it is possible to succeed in life without a college education the evidence leads us to conclude that he who expects to achieve success but lets the golden years of youth slip by without securing such training has put himself under a handicap which is almost insurmountable.

Arguments are advanced, on the other hand, against a college education. Not all people are in agreement with the preceding view of its value. It must be admitted that many popular expressions deprecate the value of school work. We frequently hear such expressions as "Don't let your studies interfere with your education"; "It is more important to be popular than to be smart"; "It is better to be an all-around man than to be a grind." Emerson once said, "You send your boy to the schoolmaster, but the schoolboys educate him." A correspondent in *World's Work* says:

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[1] M. A. Foster, "Education Pays the State," *Bulletin of the United States Bureau of Education,* 1925, No. 33, p. 27.

[2] A. C. Ellis, *op. cit.*, p. 12.

> A college education is a useful tool, but millions of successful men have proved that it is not an indispensable tool for money making. Indeed, it is open to question whether a college education is not a positive handicap for a man whose sole ambition is business success. It takes at least four years of life lost to learning the ways and the "feel" of business, and it forms habits of theory and of reliance upon "book learning" that are definitely opposed to the sensitive experimental dealing with human nature that is the greatest asset of the business man. All this is not to say that a college education is not worth having, any more than it should be read to say that money and success are not worth having. Both are worth getting, because both may be used to provide a richer life to the man who gets them. But neither is the cause of the other. On the contrary, both are the effect of a common cause, and that cause is innate capacity. This inborn gift of brains, ambition and character makes its possessor capable of getting a college education, business success, or anything else that lies within the range of that gift. This "inherent capacity" is inherited. Not every man who inherits it gets a college education or a fortune—time or place or circumstances may prevent. But no man who does not inherit it can get either a college education or a fortune. . . . To get a prosperous and intellectually rich nation is not a problem in college education, but a problem in eugenics.[1]

Armstrong verifies the statement that many business executives are opposed to college men and explains the causes of the opposition. He tells us that his employer at one time gave instructions for the employment of promising young men and then concluded, "But no more college men—please!" Armstrong attributes this opposition to a number of facts. College-bred men want to advance faster than their development or the position warrants, they want the same kind of social life that they had in college—implying that they have been spoiled socially —they are more interested in what they are going to get than in what they are going to give, they expect to be executives in a short time, and they are not as cultured as one would expect a college man to be.[1]

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[1] "Money Value of a College Education," *World's Work,* 49:240-241 (January, 1925).

H. G. Wells looks upon modern universities as outworn institutions. He declares that those universities that conform to the current idea of a university, which retain all the antiquated nonsense of calling people bachelors and masters and doctors of arts and sciences might very well go. He says that the day of Oxford and Cambridge, as the main nuclei of the general education of a great empire, is drawing to an end. The conviction has grown upon him in the last few years that from the age of fifteen or sixteen a youth should be brought into contact with realities. He feels that there is no need whatever now for anyone to suffer or to inflict upon anyone else an ordinary course of lectures, and that the present university system, along with monarchy and militant nationalism, is an outworn institution. He predicts that a time will come when Oxford and Cambridge, Yale and Harvard, will signify no more in the current intellectual life of the world than the monastery of Mount Athos or the lamaseries of Tibet do now, when their colleges will stand empty and clean for the amateur of architecture and the sight-seeing tourist.[2]

What Is the Purpose of a College Education?

We have now considered the arguments both for and against the desirability of a college education. It is evident that some succeed without a college education and that some fail with a college education. College education in and of itself apparently is not a guarantee of success. It is what is behind the college degree that counts. There must be something which a college education helps to develop. And yet, it appears to be possible to get a degree without developing this something which guarantees success in life. What is this something?

Hon. James J. Davis states the essential characteristics clearly when he says:

> Not only must our young be trained in the art of making a living —they must be trained in the art of life itself. We need well-rounded personalities. We must teach the head, the hand, and the heart. There still seems to be much confusion as to what constitutes a true education. Some think it consists in acquiring a great volume of facts. But

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[1] *Atlantic Monthly*, 138:12-13 (July, 1926).

[2] *Review of Reviews*, 74:435 (October, 1926).

> facts alone do not bring good sense and wisdom. It is possible for a man to know everything and understand nothing. As I see it, true education means, not a pumping-in of facts, but a drawing-out of inner ability. . . . [The student] should be regarded as a deep and hidden well, not as an empty tank to be filled. The mind is not in need of being filled. It must be stirred so as to bubble up from within. We need to find what Nature has bestowed on the child at birth. The purpose of education should be to cultivate those original gifts of Nature.[1]

Spillman likewise emphasizes this viewpoint when he says:

> If you are to know success in its fullest sense, the knowledge will not come to you as you walk with the battalion, but as you explore that great universe that is bounded on the north by the hair of your head, on the south by the soles of your feet, on the east and west by the outstretched tips of your fingers. The world's greatest universities are not located at Oxford, at Princeton, or at Cambridge, but under the hats of self-searching men. The most any institution of learning can do is to hold the light by which you may ignite your own candle. . . . It is, then, a question not of whether a man has been through college, but of whether the college has been through the man. . . . The correct interpretation of education holds that the mind of man is not a storehouse for the dead facts of other minds, but a living fountain flowing always from an inexhaustible self-source. . . . Success never comes anywhere of its own accord. It must be fetched; and usually you bring it in by the nape of the neck.[2]

These statements then present the important aims of a modern college education. The student should note (1) the insistence on knowledge plus understanding, the implication being that acquired knowledge must function in the life of him who acquires it; (2) the emphasis on an education which considers the student an active participant in the educative process and not a mere passive recipient; (3) the necessity of developing the moral qualities[3] of an individual as well as his mental and physical abilities; (4) the recognition of individuality; (5) the development of skill for the purpose of achieving success in some vocation, the development of ability to make a respectable living if need be, or to engage in a field of human endeavor which will mean personal growth and contentment.

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[1] "Religion in Education," *Good Housekeeping*, October, 1927, p. 19f.

[2] H. C. Spillman, *Personality*, pp. 17-18, 48.

[3] It is significant that President Coolidge and his two immediate predecessors should emphasize this element. President Wilson said, "Our civilization cannot survive materially unless it be redeemed spiritually." President Harding likewise declared that "the future of the nation cannot be trusted to the children unless their education includes their spiritual development." And President Coolidge in an address before the National Education Association said, "All of our learning and science, our culture and our arts will be of little avail unless they are supported by high character. Unless there is honor, truth, justice, unless our material resources are supported by moral and spiritual resources, there is no foundation for progress. A trained intelligence can do much, but there is no substitute for morality, character and religious convictions. Unless these abide, American citizenship will be found unequal to the task." *Bulletin of the N. E. A.*, Washington, D. C., 1924.

The purpose of a college education then, is threefold; to understand life, to enable one to earn a living, and to learn how to live. This implies the development of a well-rounded personality, the development of the head, the hand, and the heart. The development of the head implies training of intellectual capacities, chief of which is scholarship; the development of the hand consists of bodily training, not only creating desirable habits of wholesome physical living, but also developing such physical skills as are essential to a successful life career; the development of the heart includes the building of character, more specifically that group of qualities which are usually referred to as moral or spiritual.

WHAT IS PERSONALITY?

If the development of personality constitutes the chief purpose of a college education, we must consider what the qualities are of a desirable personality. Unfortunately much confusion exists at the present time in our thinking about the relationship of personality to character, and of both to mental, physical, and moral qualities. Some say that our character is what we really are, our personality is the expression we give to our character, and our reputation is the opinion that people get of our character through the observation of our personality. Character is defined in Webster's dictionary as "the sum of qualities or features, by which a person or a thing is distinguished from others; the aggregate of distinctive mental and moral qualities belonging to an individual or a race as a whole; the stamp of individuality impressed by nature, education, or habit; that which a person really is." And personality is defined as "that which constitutes distinction of person; distinctive personal character, individuality. Personality implies complex being or character having distinctive and persistent traits among which reason, self-consciousness, and self-activity are usually reckoned as essential." Spillman distinguishes individuality from personality and character by saying:

> Those men who write episodes into the history of nations are individualities as well as personalities. They are unique, being earmarked

> with the individualizing trait or talent that defies classification. Personality is a more democratic word. Individuality suggests the unsocial, personality, the social. There is a high type of genius that creates in silence and seclusion, like the inventor and the poet, but personality never develops behind closed doors. It is born out of the very contact of man with man. It feeds on the multitude. The ability to attract people is the climax of personal power. Personality is the very ego of man. It is more than character. It is his character forcefully expressed. You may have character without personality, but you cannot have personality without character; for personality is the complement of all we are. We cannot radiate qualities that we do not possess.[1]

Gates says:

> In appraising a person, then, most of us would consider, at least, appearance and other physical traits; vocational and recreational interests, aptitudes and abilities; intelligence, memory, imagination, reasoning and other mental habits; character or moral traits; sociality or social traits; temperament or emotional traits; and will or volitional traits.[2]

These definitions reveal how difficult it is to distinguish between personality and character as separate and distinct elements in an individual. In fact, they are inseparable. The terms character and personality are merely two aspects of the same thing, an active individual human being expressing himself. But since it will be necessary to adopt a definition of these terms, we shall in our discussion here use character as including everything that an individual is, has, and does. The term personality we shall restrict to the expression which an individual gives to his character.

IS PERSONALITY INHERITED OR DEVELOPED?

Coleridge once said, "Personality is individuality existing in itself, but with a nature as a ground." Kilpatrick says:

> Personality is both born and built in us. We are born with a nucleus of S-R bonds.[3] By experience and the learnings that result, we build

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[1] Spillman, *op. cit.*, p. 84f.

[2] A. I. Gates, *Elementary Psychology*. Copyright 1928 by The Macmillan Company. Reprinted by permission. P. 498.

[3] The term S-R bond has been developed by behavioristic psychology. The behaviorist believes that all activity can be explained in terms of stimulation (S) which calls for a definite response (R). The exercise of a neurone complex in which a specific stimulation results in a specific response constitutes an S-R bond.

new bonds and so gradually build up a more complex self. From this point of view the self is thus an organized aggregate of S-R bonds. Every time a person responds in any way he has insofar contributed in some fashion, for good or ill, to his personality.[1]

One may compare the development of personality with the development of a gold coin. Just as one cannot make a gold coin out of nothing, so personality cannot be built out of nothing. The first requisite for a gold coin is gold that can be coined. The first requisite of personality is a certain inheritance which can be developed. This inheritance is our initial character. The mere existence of gold does not necessarily spell gold coin. Gold coins come only as a result of doing something to and with the gold. Similarly the existence of a rich inheritance of character, does not spell personality. Desirable personality comes only as a result of doing something with the inheritance. If we ask, "Is personality inherited or developed?" our answer must be "both." We must inherit something. But the inheritance has little significance until it is developed.

Gold has certain characteristics which remain unchanged in the coining. The weight, the color, are present after coining, as before. So it is with building personality. Some qualities are inherited and they remain virtually the same as long as we live. Many of our physical traits and some ways of behaving are such qualities. But an important difference between gold and human character lies in the much greater opportunity for development in the human being. Gold, after all, remains fundamentally unchanged in spite of its coining. Human character, however, may be changed greatly. To change a human being for the better constitutes one important purpose of education generally and of college education in particular. There is at least one other important difference between coining gold and building personality. No gold has yet been known to coin itself, but human beings again and again help to build their own personalities. And it is amazing what some men and women have done in a life time with a meager inheritance!

What are the desirable qualities which we expect a college education to bring out in the development of a noble personality?

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[1] W. H. Kilpatrick, *Foundations of Method*. Copyright 1925 by The Macmillan Company. Reprinted by permission. P. 169f.

Charters has listed twenty qualities of personality as follows:

1. Ambition. Have you the will to improve yourself?
2. Industriousness. Have you the ability to drive yourself steadily?
3. Persistence and patience. How well do you put through the various plans you make?
4. Dependability. Can you be relied upon to carry out plans assigned to you by others?
5. Forcefulness. Do you give people the impression that you are capable, self-controlled, self-reliant?
6. Effectiveness of speech. Can you express your ideas clearly and convincingly?
7. Self-confidence. What are the things of which you have a right to be proud?
8. Friendliness. Are you too critical in your judgments of other people?
9. Adaptability. Do you find it easy to listen to what other people are saying?
10. Tact. Can you work in harmony with other people? How often do you praise people for what they have done?
11. Cheerfulness. Are you cheerful? When your affairs are not going well can you keep from showing it in your manner?
12. Good judgment. Can you observe in yourself initiative and resourcefulness?
13. Sensitiveness to criticism. How do you take criticisms, direct or implied, from employer, friends, and associates?
14. Ability to size up people. Do you see only admirable qualities in some people and only weaknesses in others? When you discover weaknesses in people, does this keep you from seeing their strong points?
15. Memory. Are you good at remembering names, faces, and personal incidents about the people you meet?
16. Neatness. Are you painstaking in regard to your personal appearance?
17. Health habits. Do your health habits make for or against good health, and how do they tell on your working ability and mental attitude day by day?
18. Discrimination. Can you discriminate between more important and less important matters?
19. Economy. Do you save time and effort by doing things in the right and easiest way without wasted motion?
20. Capacity to delegate work. Can you secure the coöperation of others in your undertakings? When you are chairman of a committee or president of an organization, do you do the work yourself or do you have every member of your organization do his share?[1]

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[1] M. K. Wisehart, "Personality," *The American Magazine,* 97:11 (April, 1924).

To facilitate the placement of teachers Moritz uses a form which lists the following qualities demanded of teachers by boards of education, superintendents of schools, and communities.

1. Scholarship: mastery of essentials in academic and professional subjects.
2. Personal appearance: (Woman): pleasing in face and figure, clean and neat in dress, sensible and moderate in use of cosmetics. (Man): professional in dress, clean in personal habits and conservative in style of dress.
3. High native ability: native mental endowment as distinguished from acquired abilities.
4. Mental alertness and responsiveness: mentally keen and quick to think and respond.
5. Leadership: aggressive, self-confident, independent, and creative.
6. Ability to express thoughts: command of good English, with clear and forceful oral expression.
7. Faithfulness and trustworthiness: dependable, reliable, a sense of responsibility in relation to social and professional duties.
8. Ability to discipline: power to control and govern without being severe, sarcastic or abusive.
9. Efficiency in classroom teaching: skill in putting into practice sound principles of teaching, judged largely by results.
10. Resourcefulness: the ability to meet new classroom situations.
11. Physical vigor: freedom from chronic ailments, and with strength to meet fully the demands upon teachers.
12. Judgment and tact: ability to deal justly and wisely without giving offense.
13. Coöperation: willing to help, with interest, in the enterprises of others.
14. Interest in his work: ability to make school-work attractive and interesting to children.
15. Sense of humor: open-minded appreciation of children's reactions to all classroom situations.
16. Social qualities: refinement, courtesy, wearing qualities and discretion.
17. Sympathy: an open-minded, tolerant, patient and helpful attitude toward all the behavior of children.[1]

That the qualities of personality suggested above have, for the most part, been prized for centuries is attested by that Biblical verse in the fourth chapter of Philippians which reads: "Finally, brethren, whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are pure, whatsoever things are lovely, whatsoever things are of good report; if there be any virtue, and if there be any praise, think on these things." Benjamin Franklin tells us in his *Autobiography* that about the year 1728 he conceived

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[1] Adapted from a form used by the Bureau of Educational Service, University of Nebraska, R. D. Moritz, Director.

> . . . the bold and arduous project of arriving at moral perfection. I soon found I had undertaken a task of more difficulty than I had imagined. . . . I concluded that the mere speculative conviction that it was our interest to be completely virtuous, was not sufficient to prevent our slipping; and that the contrary habits must be broken, and good ones acquired and established, before we can have any dependence on a steady, uniform rectitude of conduct.

In order to achieve this desirable result he proposed to himself the achievement of the following virtues: temperance, silence, order, resolution, frugality, industry, sincerity, justice, moderation, cleanliness, tranquillity, chastity, and humility.[1]

To these lists of desirable personality traits we might add others. All the lists that we have exhibited tell a similar story, whether they are compiled by Charters as a general test, or by Moritz as a basis of selecting teachers. We are struck by the universality of the fundamental traits in desirable personality. There are individual differences, to be sure, but the essential elements seem to be the same no matter in what field one inquires.

A recapitulation of the personality traits listed above recommends the following important activities to a college student: (1) The cultivation of intellectual ability. This may be done by maintaining throughout one's college career a high quality of scholarship. This high quality should be expressed in terms of excellent grades, if possible, or at least in a steady effort representing the best that a student can do. If he wishes to cultivate intellectual ability a student must develop desirable habits of memory, of imagination, and of thought; he must learn to concentrate in his reading, in his listening, in his note-making, and in his experimenting and observing. He must develop also an ability to form reliable judgments, to evaluate achievement, to organize thought processes and to give effective expression to thinking. (2) The development and maintenance of health. Besides giving attention to the care of his body, through his consideration of food, recreation, relaxation and rest, the student should attempt to adjust his physical environment to his welfare whenever that is possible, and when it is not possible he should learn to adjust himself to his environment. He should develop habits of healthful living in college which may be continued indefinitely through life, as well as recreational activities which at the same time that they are healthful and wholesome, will contribute to the enjoyment of living and to the development of a growing personality. (3) The cultivation of social qualities. The student should learn through association with his fellows how to cultivate strong friendships and to develop desirable social habits. (4) The preparation for a successful life vocation. The student should select and prepare for a vocation which offers successful achievement, personal growth, opportunity for advancement and for a fine type of service. Most students will prepare for a vocation because they must make a living. A few students will not need to look forward to making a livelihood, but in either case efficiency in some vocation is highly desirable. No college student should ever assume that the world owes him a living. The German poet Goethe, declares that no man is entitled to an inheritance until he has earned it. Work gladly, willingly, and efficiently performed, is the salvation of the individual and of the race. (5) The development of sturdy moral character. The student should bring to expression the desirable moral traits which he has already developed. He should stand among his college fellows as an exemplar of what is virtuous and righteous, and he should look constantly for opportunities to build new interests which increase the beauty and the strength of his moral character. He should study his actions in the light of what society has come to consider right and wrong. Out of this study will come understanding, and not only a willingness to do the right and to avoid the wrong but a demonstration of ability to do the right and to desist from the wrong. (6) The cultivation of the calmer emotions and the control of the passions. Since the emotional aspect of life looms so large the student should analyze his temperamental traits. He should utilize the emotional capital which he has inherited to the end of bringing the more violent emotions under control and of exercising the calmer emotions until they dominate his life. (7) The enrichment of life. The student should genuinely enjoy life while he lives it. He should be optimistic in his outlook, helpful in his activities, efficient in his thinking. He should select for development interests that grow in meaning and enjoyment with the years.

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[1] "Harvard Classics," 1:82-84.

SCHOLARSHIP AND PERSONALITY

If we expect to live a well-balanced life, what shall be our attitude toward study and serious scholastic endeavor? There are people, as we suggested above, who think that scholarship does not play an important rôle in life. Some students come to college primarily to play on a team, to loaf for four years, or to lead a butterfly existence. Scholastic achievement does not bulk large in such a student's thinking. He refers to his fellows who study and cultivate intellectual abilities as "grinds," observing to himself that the essence of achievement lies in the ability to "get by." Unfortunately such a student does not realize that there is one individual whom he cannot "get by." That is the student himself. There is still no "royal road to learning," nor to successful achievement. The successful men and women of all times have exemplified a high quality of intellectual ability which for the most part is the product of sound scholarship.

Investigations into the relationship of scholarship in high school and scholarship in college appear to show conclusively that those who attain to superior scholarship in high school likewise are for the most part leaders in scholarship in college. At the University of Wisconsin, it was found that only one student out of nearly five hundred who fell among the lowest quarter in high school attained the highest rank in the university. A boy may loaf in high school and take his chance of being the one exception among five hundred, but there are 499 chances against him.

Those who attain to high scholarship in college are as a rule the successful ones scholastically in the professional schools. The records of the Harvard Law School show that of those who graduated from college with no special honor, only 6.5 per cent attained distinction in the Law School. Of those who graduated with honor from college, 22 per cent attained distinction in the Law School; of those who graduated with high honor, 40 per cent; of those who graduated with the highest honor, 60 per cent. Of 340 students who entered college with entrance conditions, only 3 per cent won honor degrees in law. The graduates of Yale who entered the Harvard Law School were classified into eight groups on the basis of scholarship. The performance at Harvard of each of these groups was in precise accordance with the promise of their records at Yale. At Oxford, 46 per cent of those who received first-class honors subsequently attained distinction in the practice of law. Of the men who were content with pass degrees, only 16 per cent attained distinction.

There is also evidence to show that high scholarship in college or professional school and success in life have a high correlation. Foster[1] reports the examination of the scholastic record of twenty-three members of the class of 1894 of Harvard College who achieved distinction. He compared the scholastic record of these twenty-three with twenty-three others from the same class chosen at random. This analysis showed that those who achieved distinction had four times as many "A's" as did the twenty-three other men selected at random from the same class. Fifty-three per cent of the successful men in the first twenty-four classes (1878-1901) from the University of Oregon were superior students and only 17 per cent were inferior students. Fifty-two per cent of the unsuccessful men had been inferior students while only 12 per cent had been superior students. Ex-president Thwing of Western Reserve University, the historian of higher education in America, says that he has found no exception in the records of any American college to the general rule that those who achieve most before graduation are likely to achieve most after graduation.

More and more it is found that scholarship and success in extra-curricular activities in college go hand in hand. Participation in athletics and membership in societies and organizations of every kind, Y. M. C. A., Y. W. C. A., debating teams, and so on, are frequently deprecated by people who consider the sole function of a college to be an exclusive attention to scholastic attainments. The evidence seems to prove that more students of high rank than of low participate successfully in extra-curricular activities. Coach McCracken of Lafayette College collected data on this problem from the leading universities of the country, and discovered the facts set forth in Table I, page 67. According to these figures, eighty-two athletic captains out of 152 are above average in scholarship and fourteen of them belong to the honor group; if those whose scholarship is of average rank are added the number is raised to 108, or 71.1 per cent who are either average or above average. There are almost twice as many athletic leaders above average

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[1] W. T. Foster, *Should Students Study?* Harper and Brothers. See also W. S. Gifford, "Does Business Want Scholars?" *Harper's Magazine,* 156:669-674 (May, 1928).

TABLE I[1]

SCHOLARSHIP RECORD OF ATHLETIC AND NON-ATHLETIC STUDENT LEADERS

ACTIVITY	BELOW AVERAGE	AVERAGE	ABOVE AVERAGE	HONOR GROUP
Football captains	7	7	23	2
Basketball captains	14	6	15	4
Baseball captains	10	9	16	1
Track captains	13	4	14	7
Totals	44	26	68	14
Per cent	28.9	17.1	44.7	9.3
Non-athletic leaders	28	22	69	39
Per cent	17.7	13.9	43.7	24.7

NOTE: According to this Table, the scholastic standing of 7 football captains was below average, of 7 it was average, of 23 it was above average, and of 2 it was of honor grade, etc.

in scholarship as there are leaders below average. Similarly 108 of the 158 non-athletic leaders are above average in scholarship, thirty-nine belonging to the honor group. The percentage of non-athletic leaders whose scholarship is average or above average is 82.3, being even larger than that of athletic leaders.[2]

Although he admits that the number of cases in his analysis is small, Worcester concludes that athletes as a group are better students than the whole body of college men as a group.[3] Table II shows that athletes as a group at Kansas State Teachers College, Emporia, Kansas, completed successfully a higher percentage of credit hours and made a higher average grade than did all the men taken together. More and more, coaches of athletic teams in American colleges are realizing the significance of scholarship. They have learned that brain is superior to brawn. Many a player who is slight in stature but quick and accurate in thinking has replaced another player who was large in body but slow and inaccurate in mind. Needless to say, coaches prefer men who have both strength of body and keenness of intellect.

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[1] Reprinted by permission of *The Scholastic,* and of the *Literary Digest.*

[2] "College Athletes Above the Average in Scholarship," *Literary Digest,* 82:64 (July 12, 1924).

[3] D. A. Worcester, "Effect of Outside Work and Athletics upon Scholarship," *School and Society,* 18:779 (December 29, 1923). See also R. E. Thornhill and Carney Landis, "Extra-Curricular Activity and Success," *School and Society,* 28:117f (July 28, 1928).

Scholarship is becoming an important qualification also in social

TABLE II

COMPARISON OF SCHOLASTIC ACHIEVEMENT OF ATHLETES AS A GROUP, AND ALL COLLEGE MEN AS A GROUP

	ALL ATHLETES	ALL MEN
Average hours enrolled	15.17	14.664
Average hours successful	13.65	12.558
Per cent successful	89.94	88.77
Average grade	2.849	2.879
Number of cases	40.	235.

NOTE: Athletes enrolled for an average of 15.17 hours, all men for 14.664 hours. The grades used were 1 for excellent, 2 for good, 3 for fair, etc. The lowest number, therefore, represents the best grade.

TABLE III

SCHOLASTIC STANDING OF MEN AND WOMEN IN UNIVERSITY OF NEBRASKA SCHOOL YEAR 1925-1926

	FIRST SEMESTER		SECOND SEMESTER	
	INDEX	PER CENT C-F-D	INDEX	PER CENT C-F-D
Men	160.6	12.7	184.4	8.9
Fraternity men	166.8	11.0	186.5	7.3
Non-fraternity men	156.2	13.9	181.7	10.0
Women	243.2	5.0	250.7	3.4
Sorority women	263.9	3.3	262.1	2.4
Non-sorority women	234.3	5.7	244.8	3.9

NOTE: In determining the index number of a group, grades of 90-100 are given a value of four for each credit hour, grades of 80-89 receive a value of three, grades of 70-79 a value of two, and grades of 60-69 a value of one. For each hour for which a student receives a grade of C, F or D a score of one is subtracted from his total score. All of the points earned by students of a group in this way are divided by the total number of hours carried to get the index number. The highest index number represents highest scholastic achievement. C = Conditioned; F = Failure; D = Delinquent when dropped from course. The second column in each semester therefore represents the percentage of grades which were unsatisfactory.

standing in American universities. If the University of Nebraska is typical, Table III shows that sorority women excel all other college groups in scholastic achievement. Fraternity men as a group also excel non-fraternity men and all men as groups. The evidence presented here seems to point to the fact that students may emphasize social activities and still excel in scholarship, and that scholarship is prized as a qualification of membership in a social fraternity. In fact, the writer knows that many fraternities and sororities investigate a prospective member's high school scholarship record before voting on admission. There is a growing tendency in all college activities outside of regular class work to demand scholarship as a requisite for membership. Many college organizations scrutinize a student's scholastic record closely before he is admitted to membership. This tendency indicates a growing appreciation of scholarship as an essential qualification of living.

Conclusion

Francis Bacon once said, "A man's nature runs either to herbs or weeds." Every young person makes in the years of youth his choice as to what his personality shall become, herbs or weeds. Thorndike shows that the longevity of mental life depends on the continuous development of new secondary neural connections in the brain. Kilpatrick insists that the activities in which we engage must constitute a reconstruction of experiences on ever higher and richer levels. It is in the golden days of college life that we choose largely the activities which will determine the quality of our lives. We may choose unwisely and find middle life and old age colorless and inane, even coming to wish that we had never been born. Or we may choose wisely and find in all the years of life an increasing joy. The proper development of personality is the key to a successful life measured in achievement, in financial independence, or in happiness. College days should see the beginning of the development of that which nature has bestowed and which the rich accumulations of the centuries will help to cultivate.

Questions

1. Why did you come to college? For what other reasons do students go to college?
2. Suggest several arguments for and also several against a college education. Do your arguments justify a college education for everybody?
3. Does a college education pay in a monetary way?

4. What is personality? Is it inherited or developed? How does it differ from character? How from reputation?
5. What are the elements in a desirable personality?
6. What arguments can you advance in favor of the assertion that the most significant purpose of a college education is the development of a desirable personality?
7. Is scholarship an important consideration in a college career? Give reasons for your answer.

EXERCISES

1. From your circle of acquaintances cite several men or women who have succeeded in a particular field because they went to college. Also cite cases of successful men or women who did not attend college. Are there any points of similarity in the personalities of these two types of successful men or women?
2. Why are so many young people going to college?
3. What do you expect a college education to do to and for you?
4. Show how each of the following may contribute to the purpose of a college education (see page 58): reading Shakespeare; writing a theme on "The Weaknesses of Democracy"; performing experiments in quantitative analysis in chemistry; listening to lectures on the history of civilization; determining the quality of cement; painting a picture; developing skill in playing a saxophone; acting as president of the Y. M. C. A. or Y. W. C. A.; editing a college paper; teaching a Sunday School class.
5. Make a personality chart which in your opinion represents all of the elements of a desirable personality. You will find helpful suggestions in Sel. Ref. 5, 8, 10, 14. After you have made the chart check your personality against it, noting your strong and also your weak characteristics. Have some friend check it also. Compare his rating with your own. You will probably find that you have underrated yourself. Then strengthen your desirable traits.
6. Read Ellis (Sel. Ref. 4) and Foster (Sel. Ref. 6). How significant is education to a state? To a nation? What do you think of the statement, "The pen is mightier than the sword"?
7. In what respect does the foregoing chapter agree or disagree with the viewpoint of Marks? (Sel. Ref. 11.) With the viewpoint of Schwab? (Sel. Ref. 12.)
8. Is a desirable personality an asset to men and women in every profession? Does it contribute more to success in some professions than in others?

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CHAPTER IV

THE NATURE OF STUDY

Our word "study" comes from the Latin noun *studium* which means eagerness or zeal, and it is related to the Latin verb *studere* which means to be eager, zealous, or diligent. As originally used in English, to study implied that an individual was engaged, with diligence and zeal, in mental concentration on a narrowly defined subject. In this sense "study" was used widely in English from the thirteenth to the eighteenth centuries. The eighteenth and nineteenth centuries saw the development of a number of varying conceptions of the function of education. Since study and education have always been closely related, the term "study" assumed new meanings with the promulgation of new theories of the function of education. These theories of the function of education, developed during the past two centuries, are still more or less potent. Hence we are not surprised to find a wide range of meanings attached to the word "study."

How Lexicographers Have Defined Study

An examination of the definitions of "study" recorded in dictionaries reveals nine commonly accepted meanings. The first four refer to the use of the word "study" as a verb, the last five to its use as a noun.

1. In its most common sense as a verb, to "study" means to apply the mind to books or learning; to set the mind or thoughts upon a subject to be learned or investigated. To study means "to exercise the mind in learning, to apply oneself to the acquisition of knowledge." (Century.)

2. As a verb study also includes the degree of attention given to a certain subject or thing. To study is to consider attentively and examine closely any object of thought. (Webster.) "To study is to regard attentively, to pay distinguishing attention to." (Century.) "To study is to read a book, a passage, an author, with close attention." (Murray.)

3. The emphasis in all definitions of "study" is on the mental activity involved. Virtually the whole range of mental activities is included.

To study is to acquire knowledge by investigation, reading, memorizing, or the like; to read and examine so as to learn, understand, or memorize. (Webster.) To study means to memorize words, facts or principles, to inquire into, to investigate, to consider in detail, to understand, appreciate, or assimilate anything, especially a book. (Century.)

4. Profundity of thought or meditation is another meaning commonly applied to "study." "To study is to dwell upon anything in thought, also to muse, ponder, meditate." (Webster.) To study is to make an earnest and a protracted examination of a question by reflection, collection, and scrutiny of evidence. It is to deliberate, ponder, muse, meditate, cogitate, reflect, revolve thoughts or ideas, deliberate upon, think out, to look at musingly as in a brown study. (Century.) To study is to think intently, to meditate, to reflect, to try to recollect something or to come to a decision. It is thought or meditation directed to the accomplishment of a purpose. (English.) Also "to study is to be occupied with a specific branch of learning as the subject of one's education course or professional training." (English.)

5. As a noun "study" means the acquisition of knowledge. It is the act or process of acquiring by one's own efforts, knowledge, or information of a particular subject. (Webster.) This idea shows the influence of the knowledge-as-power theory of the function of education.

6. "Study" is used also to refer to a school subject or to any subject, topic, or object to be studied; it may be a particular branch of learning that is studied; a presentation of any object or scene intended for information, instruction, or assistance as a study of hands or a study of heads, a study of law or languages, a lesson, a part, or a song. (Webster.)

7. "Study" is also used to refer to the product or result of learning or research. A thesis or book is frequently referred to as a study. In music the term "study" is applied to a selection to be learned or practiced. One of the most widely read musical magazines is called *The Etude,* meaning "The Study."

8. A room in a house or a school or an office set aside specifically for reading or study, is generally called a "study."

9. In theatrical circles, the term "study" is used in two special senses. It is applied to one who studies or learns or memorizes a part for the stage. It is also used to refer to one who is working under the direction of, or learning the part of, a major actor or actress. Such an

individual is referred to as an "understudy." The term "understudy" is used similarly in other vocations. For example, a second string catcher or pitcher in baseball is frequently referred to as an "understudy."

HOW COLLEGE STUDENTS HAVE DEFINED STUDY

In order to determine how generally these dictionary definitions are accepted by college students, 701 of them were asked to define the term "study." On pages 75 and 76 we have a tabulation of the definitions which these students gave. An examination of their definitions indicates that the dictionary definitions are widely accepted. Two hundred and fourteen of the 701 students said that "study" is the "acquisition of knowledge." In the term "acquisition" they included gaining, mastering, fixing, absorbing, gathering, and grasping; and in the term "knowledge" they included facts, subject matter, information, thoughts, principles, or anything learned. A slightly larger number—228—emphasized the element of concentration of the mind on subject matter as the essential element of the term "study." Some students indicated that "study" is mere concentration; more of them said that it is concentration of the mind or of attention; it is mental effort, mental energy, or mental activity; and most of them implied that the concentration is on some specific subject matter or material, on a school subject, or a definite piece of work; on assignments, problems, lessons, work to be done, and on thoughts.

Closely related to the idea of concentrating the mind or the attention on a given subject, is that of applying oneself or one's mind to that subject. One hundred and forty-four students said that study is a reacting or responding to situations, stimuli, or subject matter. Seventy-six specifically emphasized two additional elements, the feeling of need and the feeling that the reaction must deal with ideas or take place on the ideational level.[1] A number of students felt that the mere acquisition of knowledge or the mere reaction to situations was not sufficient. They insisted that "study" should constitute a reorganization of experience—that is, an association of the new experiences with the old in such a way that the old experience would be completely reconstructed. In a number of cases, emphasis was placed upon the utility of facts or experiences learned and their application to the

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[1] See Chap. XI for a fuller discussion of this subject.

DEFINITIONS OF STUDY GIVEN BY COLLEGE STUDENTS

DEFINITIONS	NUMBER WHO ANSWERED					
	FRESH. 357	SOPH. 215	JR. 81	SR. 41	GRAD. 7	TOTAL 701
1. Concentration of mind or attention on subject matter...	98	78	34	18	..	228
a. Systematic mental work	2	...	...	...	..	2
2. The acquisition of knowledge.	101	74	25	10	4	214
a. The mastering of subject matter..............	7	11	7	1	1	27
b. The absorbing of knowledge.................	6	5	2	1	..	14
3. The reaction or response to situations, stimuli or subject matter..................	73	57	11	3	..	144
4. The reactions to situations involving a desire for knowledge based on some specific need.................	56	20	...	...	..	76
5. The application of oneself or one's mind to subject matter, etc..................	30	24	15	3	1	73
6. The association of new experiences with old; reorganization of experience.........	35	16	2	3	..	56
7. The use or application of facts or experience now or in future	30	9	...	...	..	39
8. The learning of subject matter, etc..................	25	20	2	2	..	49
9. The memorizing of lessons....	17	36	11	3	..	67
10. The solving of problems.....	32	12	8	2	1	55
11. Reading....................	19	21	9	1	1	51
12. Thinking....................	21	2	3	7	..	33
13. Something more than reading, not with books only.......	22	6	2	4	..	34
14. Understanding.............	9	17	4	...	..	30
15. Observation................	11	11	4	...	..	26
16. Reasoning..................	10	8	4	...	..	22
17. The getting of an assignment or lesson................	1	7	4	1	..	13
a. The meeting of demands of professors.........	1	...	...	...	..	1
b. The study to make grades	1	...	...	...	..	1
c. The study to recite well.	1	1	...	...	..	2
18. Interpretation.............	1	1	...	...	..	2
19. Assimilation................	4	3	3	...	..	10
20. Investigation...............	1	1	...	...	..	2
a. Research.............	...	...	2	...	..	2
b. Experimentation.......	...	3	4	...	..	7
c. The finding out about a subject.............	5	...	...	...	..	5
d. Analysis..............	6	...	...	...	..	6
21. Assembly, collection, organization, classification.........	2	2	1	...	..	5
22. Mental discipline or mental exercise.................	1	3	1	...	..	5

future. Mere learning of subject matter or of facts was emphasized by forty-nine students. One senior declared that study is unguided learning, while three seniors said that it is trial and error learning.

The methods of study which students use were also revealed in a number of definitions. The most common method mentioned was memorizing. Others listed were problem-solving, reading, thinking, understanding, observing, reasoning, and investigating; also assembling, collecting, organizing, and interpreting data. The order in which they have been mentioned here indicates the degree of emphasis put upon them. Attention should be called to the types of investigation which students mentioned. Research, experimentation, finding out about a subject, and analysis were named specifically. Thirty-four students suggested that studying did not apply to the use of books alone but that it included additional activities. Some of them mentioned a number of life activities in which books were not involved at all. The reader will be interested to note the few responses in which the mere getting of an assignment or a lesson was spoken of.[1] One student said that he studied to meet the demands of his professors, another studied to make his grades, and two said that they studied to recite well.

We shall give below a few of the definitions of the term "study" which were given by students.

> "Study means to apply the mind seriously and purposefully to the solution of a problem at hand."
>
> "Study is acquiring knowledge by concentration, reflection, memorization, reading, and observation."
>
> "When I study, I am acquiring new facts or information from subject matter and relating it to what I already know, what I have done and what I think I will be doing in the future. In order to pass examinations, I find a great deal of memory work essential."
>
> "Study means learning from various books facts or truths, which will apply to my every day work and life. Real study means nights of hard, ceaseless grinding."
>
> "Study is the effort put forth both physically and mentally to learn the subject matter of a course."
>
> "Study means a thoughtful concentration upon the subject matter at hand. It is the process of learning (making and breaking synaptic connections) and the memorizing of facts. One who studies well will have the proper physical as well as receptive mental conditions and will read with his mind, not just with his eyes. He will bring in past facts,

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[1] See Definitions of Study, Item 17, p. 75.

question statements, and attempt to solve questions arising in his mind. One who studies well will organize his material, generally and particularly."

"By study we mean making reactions to the material before us. When we study we observe, we concentrate, we assimilate."

"Study means placing undivided interest and intense application upon the solving of any problem. Study to me means more than acquiring book knowledge. Any person who has a problem to solve and applies himself to the solving of it by using old material or new is studying."

"When one says that he is going to study, of course we think of getting lessons. In studying, one takes the text or material of the subject and makes it his own through the method of memorizing or of reasoning out the material used, learning it in that manner. In order to study in such a way that it will be beneficial one must solve the problem that is presented and by solving these problems we learn something about the subject."

"Study is the reading and memorizing of materials in books, so I can pass a good examination in them. Also it means to do the required written work."

"To study is the ability to direct the activities of the mind to such a concentrated degree that the mind may imbibe new ideas and open new avenues of thought and reason."

"Study may be said to be concentrated thinking."

"Study is that type of mental exercise by which we consciously gather knowledge from books, lessons, and lectures, and relate that to our own experience."

HOW PSYCHOLOGISTS HAVE DEFINED STUDY

We have reviewed the definitions of "study" given by dictionaries and by college students. Let us now turn to the psychologist whose business it is to tell us how mental activity takes place. We discover immediately that in order to understand the term "study" we must understand the term "learning," for learning and study are closely related.

Perhaps the most important contribution which psychologists have made in recent years to the study of how the process of learning occurs, is the discovery that learning takes place by means of a very delicate and complex mechanism consisting of sense organs, neurones, that is, nerve cells together with their processes, muscles and glands. With the operation of the sense organs all of us are at least somewhat familiar. We know that the eyes, to take a single example, receive the stimuli which result in sight. It is the function of sense organs like the eye to aid neurones in the reception of stimuli from the outside world. Neurones themselves compose the nervous system. It is their function to receive, to transmit, and to discharge stimuli. There are billions of neurones in the human body. Most of them are located in the cortical area of the brain and in the spinal cord. They are too small to be seen without the aid of a microscope and their complexity is very great. In some respects the neural mechanism is like a modern telephone system, except that the complexity of the former is thousands of times greater than that of the latter. Muscles and glands are generally agencies of final action. They are usually stimulated by the discharging neurones but in some cases they also serve as sources of stimulation.

The figure on page 79 represents graphically the nature of a very simple experience in this exceedingly complex mechanism. Let us suppose that you sit comfortably in a chair when somebody sticks your hand with a pin. Almost instantly you jerk away your hand and cry out that you have been hurt. The stimulation in this case is the pin prick, the response consists of a hand jerked away, a recognition of the hurt, and a protest that you have been hurt. The stimulation takes place at A, in the sense organ of touch. The stimulus results in reactions in muscles at C and at J, in a variety of mental reactions at H and in the throat muscles at F. The speed with which the whole experience takes place indicates the sensitivity of the mechanism, and the variety of the reactions shows its complexity.

An experience such as has just been described is called *a way of behaving,* or more simply *a reaction.* Gates says:

> All forms of human behavior, whether muscular activities, such as grasping, walking and speaking; glandular activities, such as the secretion of tears, saliva and bile; or mental activities, such as seeing, hearing, becoming afraid or angry, recollecting or imagining, are reactions to definite stimuli. This may be called the reaction hypothesis.[1]

Many persons object to the reaction hypothesis on the ground that it seems to make human behavior too mechanical, and that it leaves out of consideration individual desire, will, and purpose. This atti-

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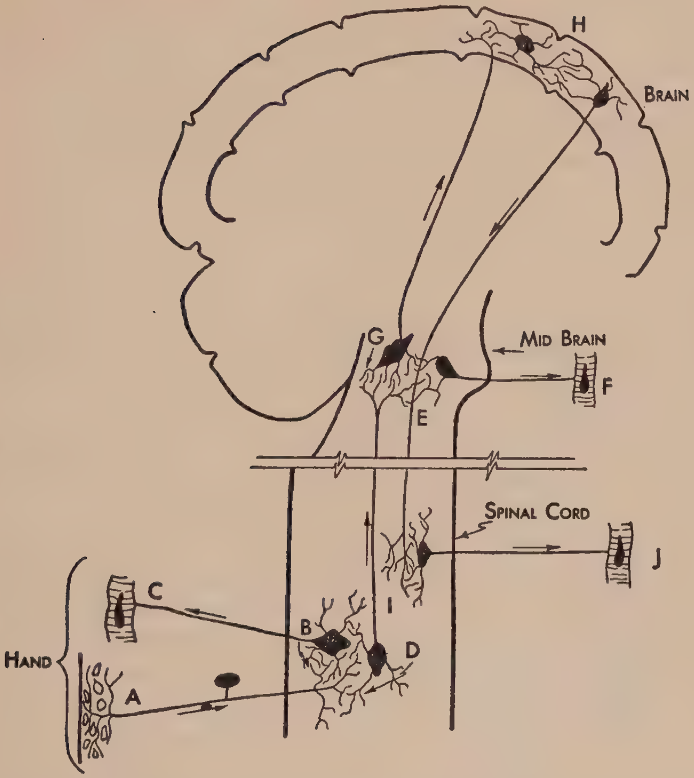
[1] A. I. Gates, *Elementary Psychology.* Copyright 1928 by The Macmillan Company. Reprinted by permission. p. 33.



A schematic representation showing a few of the simplest reactions to the prick of a pin.

The sensory nerve ending in the finger A is stimulated by the prick of a pin. This stimulation goes by way of the sensory nerve through the synapse at B, back by way of the motor nerve to the muscle of the hand and finger, at C, which jerks the finger away. This same stimulation goes through the synapses at D and E to the throat muscles at F where the cry of pain is expressed. It goes to the brain at H where the prick is recognized and, among numerous other reactions, a message is sent through the synapses at H and I to the muscle of the other hand at J, which soothes the injured finger. Although the speed at which these reactions occur makes them appear to be instantaneous yet there is in reality a perceptible and measurable instant of time required for such a series of reactions.

tude is due in part to failure to appreciate the significance of laws in the mental and spiritual realm which are just as essential to an efficient human life as the laws of physics are essential to an efficient use of electricity, or the laws of chemistry are necessary to a wise selection of food. The reaction hypothesis does not imply that all of our reactions are fixed at birth. On the contrary it makes significant the possibilities of changing human behavior and developing personality by changing many of our inherited reactions or by developing innumerable new responses during our life time.

If the student will turn again to page 79 he can readily note the large number of possible reactions to such a simple stimulation as a pin prick. There may be only a simple motor response of withdrawing the hand, or there may be a mental response of anger, and a glandular response of tears, as well as a motor, and not merely one of each of these but many. In fact, most of our mental responses are so complex that even a trained psychologist has difficulty in discovering all of the elements involved.

The element which makes variation in response possible is the transition point from one neurone to another, called the synapse. The synapse may be compared to the switch on a railroad. If there were no switches there would be no possibility of shifting trains to side tracks, to branch lines, and so on. So too if there were no synapses, stimuli would be compelled to follow a single path with no hope of ever being transmitted to another one. The reassuring thing about most of our synapses is the possibility of making not one but many transmissions at the same point and of modifying them from time to time.

A study of behavior or reaction to stimuli will reveal a great variation in the degree to which our responses are fixed unalterably from birth. Some of them are so nearly fixed at birth that there is little that we can do to change their automatic nature. Breathing, the beating of the heart, and the processes of digestion are examples of such behavior. On the other hand some of our responses are only very general at birth. The vague way in which an infant manipulates its hands and other parts of its body, is an example. How thoroughly this ineffective general tendency to use the body may be modified to become definite, is evidenced by the skill of Paderewski at the piano, or of Fritz Kreisler with his violin, or of Lindbergh at the controls of his aeroplane. In addition to these two types of reactions, those more or less fixed at birth and those only vaguely fixed at birth, there is a large part of our reacting mechanism which is not fixed at all at birth. It awaits the stimulation of our environment or of our inner urges. It is in this part of our reacting mechanism that reside the capacities which may be developed into the abilities that stamp us as intelligent beings.

Through these transition points from one neurone to another, or synapses, we possess infinite possibilities for breaking old connections and making new ones. This possibility is usually referred to as plasticity or modifiability, and it is this plasticity or modifiability which affords the opportunity for learning. *Learning,* then, *is changing behavior whether physical or mental; it is the modification of existing reactions and the development of new reactions.* As an example of learning by modification we may point to the child who has a natural desire to touch brightly colored objects. This child sees a red hot stove and immediately touches it. The painful response which accompanies the experience of touching the stove leads the child to modify this tendency. Again, learning to add is an example of learning by developing a new reaction. It is true that certain native tendencies such as curiosity, a desire to be active, and the like, are involved in the child's attempt to develop his capacity to add. But the specific responses in number work in addition are new behavior patterns. No human being has ever inherited the proper responses to number combinations. Each child must learn them anew as well as the other responses involved in the ability to add numbers.

In order to understand the nature of study we must also know something about consciousness, for study is always a conscious activity. Unfortunately nobody knows just what consciousness is, although there are at the present time several opinions regarding it. One group of psychologists believes that consciousness plays a large part in causing and directing behavior, another group believes that consciousness has nothing to do with behavior. Other groups represent intermediary positions.

For our purposes, it will be sufficient to say that consciousness, or awareness of experience, does exist; that it is directive in some modes of behavior and selective in others; that in each individual the degree of awareness varies from time to time; and that the degree of awareness varies from individual to individual. Let us suppose that a student is sound asleep, that is, totally unconscious. If someone were to tickle his foot gently, it would probably be withdrawn as a reflex activity without changing the status of his consciousness. If the tickling were to be repeated the student might smile in his sleep indicating that he was dreaming that somebody was tickling him. A more violent tickling would awaken him. He would probably blink his eyes and wonder what had happened. If the tickle were repeated again he would be fully aware of it. At this point his state of awareness would be complete. Thus the awareness of experience varies in the same individual from time to time.

As an example of the variation of awareness from individual to individual we may point to the differences in the number of things observed by a group of students attending a moving picture show. One of them will see only the story which the picture tells; another will notice the costumes, the scenery, and the staging generally; another will see all of these things and in addition he will study the technique involved in producing the play, as well as the probability of the truthfulness of the scenes; still another will see all of these things and will also notice the music furnished by the orchestra and the pipe organ as well as the size of the crowd, the decorations in the theater, the possible exits in case of fire. Some persons are conscious of a surprisingly large number of things at the same time while others take note of very few.

This brief explanation of consciousness is necessary to help us distinguish between conscious and unconscious learning. An example of unconscious learning is the experience of a baby in the family of one of the writer's colleagues. When this child was a month old, the muscles of the pylorus became obstreperous when liquid of any kind was introduced into the stomach. These muscles would react spasmodically, expelling the liquid. This condition naturally threatened starvation to the child. The physician attacked the problem by mixing a small quantity of atropin with the water or milk which the baby took each day. The effect of the atropin was to paralyze the muscles of the pylorus sufficiently to permit the liquid to leave the stomach properly before the militant muscles could recover. This process was repeated for a long enough time that now the muscles have "learned" to behave and apparently atropin will no longer be necessary. This learning, needless to say, has taken place wholly without the child's being aware of it.

Conscious learning is of two types, directed and undirected. The directive or selective element in consciousness is usually expressed in the term "attention." An example from reading will serve to illustrate how this element in consciousness functions. Let us suppose that I am reading a very interesting story in a magazine. There may come to my sense organs many stimulations, such as the ticking of the clock, the sound of dishes in the kitchen, the playing of sunlight on my book, but I am unaware of them because all of my awareness is concentrated on my story. Headley rightly says:

> Always, in waking life, attention is given to something; if not to one thing, then to another. When the teacher says: "John! You are not paying attention," she does not speak the literal truth. He is not paying attention *to her*. But, if John's attention is not *paid* to his teacher, you may be sure that it is *given* to something,—to a snarl of string under his desk, a note in circulation about the room, or a ball game planned for the next day. So it is always with all of us. "*In*attention" is *attention* directed elsewhere. It is only in this sense that one is ever absent-minded. The mind is absent from this situation when it is present at another, just as a student is absent from class when he is present at home. Thought may be absent from a given situation either because it is devoted to some remote and perchance more important one, or because it is flitting hither and thither. In one case we have the person "lost in thought." In the other case we have the "scatter-brain." But in any case there is attention to something. The problem of concentration is not how to generate attention; it is how to *direct* attention.[1]

The line between directed and undirected conscious learning is often difficult to determine. For instance, as I go down the street on my way to class two cars suddenly collide beside me. The accidental nature of the occurrence will probably claim my whole attention. I stop and look with anxiety to see whether anyone is hurt, whether the cars are badly damaged, and I listen to what is said. No one would deny that I learned something here, for I can now go to class and tell what I saw. But as far as I am concerned the learning was for the most part undirected. The stimulation was so strong that I made the responses suggested with little or no volition on my part. On the other hand, suppose that when the first interest in the accident subsides, I suddenly realize that I must be in my office at a rapidly approaching hour. If the accident is serious, I may decide that it will be better for me to stay to call the ambulance, to look out for those who are hurt and to be of assistance generally rather than to attend to the affairs in my office. This is learning too but of the conscious type, for it is self-directed. This is study. *Study,* then, *is self-directed conscious learning.*

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[1] L. A. Headley, *How To Study in College*, p. 54.

Let us take another example. Let us suppose that you have been asked to make a report on "The Dred Scott Decision." We shall assume in the first place that you are interested in the subject and that you, therefore, are eager to prepare the report. Probably your first move will be to determine how you will get your material. If you have already developed the habit of going to the library or to books for information on such reports, there will be no study if you seek your material there. If, on the other hand, you find yourself confronted with the necessity of deciding whether your material shall come from the reading of books, from personal interviews with persons who lived at the time of the Civil War, or from interviews with jurists, this act of deciding will be study. You will be consciously arriving at a decision. The decision itself is an act of learning and the laws of learning operate. Having decided to search for your material from book sources, you arrive at the library. Again, if going to the *Readers Guide* is with you a habit in such situations, to go to it now will not be study: that will be mere conscious activity; but if you do not know how and where to find your materials, then you will be confronted with the necessity of making another decision. You may try a number of ways to find materials. You may ask the librarian, you may go to the card catalog, you may look through the stacks, and so on. Eventually you will by this trial and error procedure, discover the right response to the situation. This then will be study. It will be self-directed conscious learning. Let us now suppose that you find a book which promises to give you the information you desire. You begin to read. If you read everything with the same degree of attention, making no attempt to select or to evaluate, that will not be study; but if you read specifically to find material for your report, constantly selecting and evaluating, that will be study. You will learn, and the learning will be conscious, for you yourself are directing the conscious learning.

THE ESSENTIAL CHARACTERISTICS OF STUDY

This analysis of study reveals a number of typical characteristics. First of all, the learner is mentally active, not passive. We said a moment ago that study is self-directed. Lockwood says:

> The ideas involved in a lesson are not to be introduced into one's anatomy merely as dead lumps of truth. They are to be reacted upon. Independent processes of thought must be set in motion. . . . The material presented for consideration must be passed upon. It is to be arraigned before the high court of one's own thought.[1]

Lyman discusses this activity in connection with reading:

> We are then to develop our powers as readers by thinking of our duties as active partners of the authors whose books we read. Our share of the joint investment is liberal contributions from our own experiences. . . . The dividends we are to reap depend to a very large extent upon what we do *to* and *with* the materials which writers place before us.[2]

Kerfoot says in agreement:

> Reading, so far from being merely a receptive act, is a creative process; . . . it is "creative," not simply in the more or less cantsodden "artistic" sense, but in a biologic sense as well; . . . it is an active, largely automatic, purely personal, constructive functioning. . . . In short, . . . it is *a form of living*.[3]

Kitson warns the student, however, that the most complete curriculum and the most gifted and scholarly college teachers cannot educate him unless he puts forth vigorous mental effort in his own behalf. "Banish the thought," he says, "that you are here to have knowledge 'pumped into' you. . . . Learning is a matter of vigorous effort, and the harder you work, the more powerful you become."

The second characteristic of study is that the learner's activities are intensely purposeful. Daydreaming is not study. McMurry says:

> The mental activity called study is called forth in response to specific needs. . . . Study does not normally take place except under the stimulus or spur of particular conditions, and of conditions, too, that are unsatisfactory. . . . A lively consciousness of the unsatisfactoriness of a situation is the necessary prerequisite to its investigation; it furnishes the motive for it. . . . Only such thinking and such drill are included within the term as are integral parts of the mental work that is necessary in the accomplishment of valuable purposes. Study is systematic work, and not play.[4]

Kilpatrick also emphasizes the necessity of a feeling of need. He says:

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[1] F. C. Lockwood, *The Freshman and His College*, p. 55.

[2] R. L. Lyman, *The Mind at Work*. Scott, Foresman and Company. p. 200.

[3] J. B. Kerfoot, *How to Read*, p. 5.

[4] F. M. McMurry, *How to Study*, p. 12f.

> Attention to promising elements in the situation in order to make good his lack is what I call study. Study is thus the studious effort to acquire a needed new way-of-behaving.[1]

When we reviewed the definitions of study given by dictionaries and by students, we noted the emphasis on concentration. This is merely another way of saying that study is conscious learning which is self-directed. Concentration constitutes the third characteristic of study. It is not enough to feel a need and to be engaged actively in something. The activity must also be directed. Lockwood has this in mind when he says:

> Study consists in focusing the mind upon the subject in hand. The little child scarcely has any mind that he can call his own. He lives out of doors, on the open highways of sensation. He surrenders himself to the last and gaudiest attraction that bids for his attention. We laugh at professors and philosophers for being absent-minded. In reality they are not absent-minded at all; they are so present-minded that they are utterly oblivious of their bodies and of everything around them. They have learned the art of study, and are giving attention mightily.[2]

Headley similarly says:

> Directed attention characterizes the active mind which makes its way. Random attention characterizes the passive mind which takes the way open to it. To drink in sights and sounds, or bits of information, as they come is not to concentrate. To concentrate is to determine by a controlling purpose what shall come to the mind.[3]

The fourth characteristic of study is that it is a life activity, and not confined merely to books or schools. It is unfortunate that most students think of study as a mere school activity. Since study is self-directed conscious learning, it represents an activity which is present outside of the classroom as well as within it. Let us suppose that you are driving an automobile in an unfrequented part of the country. Suddenly the engine sputters and dies and no amount of coaxing seems to bring it back to life. You are now in a real study situation. You are totally conscious. You have a real feeling of need. You need to know something you don't know, and hence you are about to learn something. If you are to get out of your difficulty you will need to direct your activities. And you do. You suggest to yourself possible solutions of your difficulty; you study their implications before or while you try out these suggestions. This is study just as genuinely as learning a lesson for a course in chemistry. In both cases you use the same physical organism. You yourself direct the conscious learning in each case. Your study of the chemistry lesson is a part of your life just as truly as the study of your automobile difficulty. Study is a life activity both in the classroom and out of it.

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[1] W. H. Kilpatrick, *Foundations of Method*. Copyright 1925 by The Macmillan Company. Reprinted by permission. p. 280.

[2] F. C. Lockwood, *The Freshman and His College*, p. 49f.

[3] L. A. Headley, *How to Study in College*, p. 55.

We noted earlier in this chapter that dictionaries include a wide range of mental activities in the term study. So also do definitions of study given by students. They said truly that studying may be memorizing, problem solving, reading, thinking, deliberating, meditating, understanding, observing, reasoning, concentrating, interpreting, assimilating, investigating, experimenting, analyzing, searching for information, assembling, collecting, organizing, and classifying data. Any one of these and all of them may constitute study either in college or out of college. It depends upon what is going on in the learner's brain. If he himself is directing conscious learning, it is study; if, on the other hand, he is not consciously directing it, it is not study.

We have emphasized the self-activity of the learner in study. It is essential to note that study implies not only that the learner is doing something, but it also implies that study does something to the learner. Therefore, a fifth characteristic of study is that it changes the learner. This change is generally referred to as a "reconstruction of experience." The fact that study implies learning naturally suggests a resulting change in the learner, for learning is changing behavior. If it were not for the change which takes place in the learner we could never develop new interests. Progress and civilization would be impossible.

SUMMARY

Dictionaries give at least nine different definitions of study. Definitions of study given by students closely resemble those in the dictionaries. In order to understand the nature of study it is necessary to understand the nature of learning for learning and study are closely related. Learning takes place through the operation of a very complex physical mechanism composed of sense organs, neurones, muscles, and glands. The operation of this mechanism constitutes behavior. Any modification of behavior constitutes learning. Learning may be conscious or unconscious. Conscious learning takes place in the cortical area of the brain. Conscious learning may be directed or undirected. When learning is directed consciously it constitutes study. Study is self-directed conscious learning.

The essential characteristics of study are that (1) the learner is mentally active, not passive; (2) his activities are intensely purposeful; (3) he concentrates; (4) he finds study a life activity; (5) he is changed by study.

Study is an intensive mental activity. In fact, it is the highest type of mental life of which creatures on this earth are capable. Study is the basis of discovery and invention, of progress and achievement. It is the foundation upon which civilization is built.

QUESTIONS

1. Ask a number of students who have not read this book to give you their definitions of study. How do these definitions compare with the definitions of study given by students in the foregoing chapter?
2. What objections can you find against the dictionary definitions of study?
3. What is the nature of the physical organism which makes learning possible?
4. Define learning in terms of this physical mechanism. Do we ever learn anything without this machinery?
5. Tell all you know about consciousness.
6. What is the difference between conscious and unconscious learning? Give an example of each.
7. Distinguish between undirected and directed conscious learning by giving examples of each.
8. Defend the statement that "study is self-directed conscious learning."
9. What are the essential characteristics of a study activity?
10. Show how it is true that study is the basis of discovery and invention, of progress and civilization.

EXERCISES

1. Watch your activities for several days to determine how much time you spend (1) in idle daydreaming, (2) in undirected learning, and (3) in purposeful directed learning. A student is an individual who studies. During how much of your total time of wakefulness do you deserve the name of student?

2. Tell when each of the following activities constitutes study: listening to a lecture; making notes on a reading assignment; watching a lecturer perform an experiment; carrying out an experiment in the laboratory; reading the *Literary Digest;* reading a newspaper; learning the conjugation of a French verb; memorizing a poem; teaching a class; making a dress; making a library table.
3. We have emphasized the importance of purpose in study. Do you attack all of your class work with a driving interest? If not, how do you account for your lack of drive?
4. Many students say that it is hard for them to concentrate in their class work. Do you think that Edison or Ford or Lindbergh has any difficulty in this direction? Explain your answer.
5. Make a list of suggestions for yourself which will help you to concentrate in your class work. (Sel. Ref. 1, 5, 10.)
6. What changes in your college classes can you suggest that would make them more purposeful and hence would make your study more successful?
7. Read Sel. Ref. 4 and 7 which deal with the physical machinery for learning. What information, in addition to what was presented in the foregoing chapter, do you find?

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CHAPTER V

HOW TO STUDY

Lockwood says:

> We should go about the preparation of a lesson as a general would set about the capture of a city; or an engineer would endeavor to solve the problem of supplying a city with pure water; or as a detective would undertake the task of ferreting out a crime; or as you, yourself, would try to start a rabbit from a brush-heap.[1]

We said in the preceding chapter that studying is self-directed conscious learning. The student is intensely active mentally, he directs every move that his mind makes. It will be apparent that if direction is to result in desirable learnings there must be much attention to process. It is our purpose in this chapter to tell more in detail how the student may be fully as successful in his studying as the general, the engineer, the detective and even the hunter are successful in attaining their objectives. We shall advance seven suggestions which the student may well follow in his efforts to make his studying efficient.

The First Step: Provide Conditions Essential to Successful Study

If the student has watched the construction of a building, or the prosecution of any other important enterprise of human activity, he will have been struck by the extensive and intensive preparations which have had to be made both before it began and throughout its progress. The successful student similarly must insist on certain essential conditions in order to guarantee a high degree of success in his studying. There are at least four conditions which should prevail: (1) readiness; (2) fitness; (3) interest; (4) morale.

The student must be ready if he is to succeed. Readiness consists partly in having at hand all the paraphernalia necessary for a given piece of work—books, pencils, pen, and all the equipment which he knows will be necessary for the achievement of a task. The good carpenter brings with him all the tools which he knows he will use as well as some which he may have use for. We would not rate as efficient a carpenter who had to go home frequently to get some tool whose use he did not anticipate. We would not rate as efficient the commanding officer who did not furnish his men with sufficient ammunition and other necessities to sustain themselves in all of the exigencies of a battle. The successful man always exercises foresight. He anticipates his needs and provides against them in advance.

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[1] F. C. Lockwood, *The Freshman and His College*, p. 55.

The student must exercise similar foresight. He should ask himself before beginning a task, What materials shall I need in order to get this lesson, to do this laboratory exercise, to master this assignment? Then he will proceed to provide these materials and arrange them for his greatest convenience. The careless student begins his task—let us say it is an exercise in which it is necessary to do assigned reading on which a written report is to be made—by doing the first thing which comes to his mind; in this case it will probably be by beginning to read. He will not have read far before he will want to make some notes. At this point he must put the book aside in order to start a hunt for a pencil. A little later he may find it desirable to write down some of the important sentences or to summarize some of his reading. Again he must put book and pencil aside in order to search for paper. The reading has scarcely been resumed when he encounters a difficult word. Once more the whole operation has to be stopped, so that he may find the dictionary. Further interruptions will be occasioned by the necessity of hunting pen or ruler. The good student, on the other hand, thinks of the probability of using all of these things in advance. Having provided them he can continue his work without interruption, after he has once started it.

We said a moment ago that readiness consists partly in the providing of all the paraphernalia necessary for a given task. This may be referred to as an external readiness. There is also an internal readiness which must be emphasized. This is usually referred to as a readiness of the organism to react to stimulation. Thorndike has put this in the form of a law.[1] Learning, according to this law, is facilitated by a state of readiness on the part of the organism, and conversely it is hindered by a state of unreadiness. This readiness is partly physical, partly mental. The physical readiness we shall refer to here as fitness, the mental readiness as interest.

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[1] E. L. Thorndike, *Educational Psychology, Briefer Course*, p. 55.

A student must be physically fit if he is to pursue his studies vigorously. In a later chapter we shall show how one may keep fit. It will be sufficient here to say that to undertake study shortly after a heavy meal, carries with it a probability of failure. Similarly to undertake study when the mind is occupied with worry is sure to result in difficulty in focusing attention on one's subject. Studying is the most intensive mental work in which human beings engage. It implies concentration of the highest type. All distracting factors must be removed or ignored and attention must be riveted on the task at hand. The student should exercise the same wise foresight in guaranteeing fitness that he exercises in providing himself with the necessary materials for successful work. If he knows that he has before him an evening of strenuous study, he should eat a light meal, consisting largely of fruit and vegetables. If the day's work has left him weary, he should take a half hour or an hour for relaxation, rest, or recreation to put his body in the proper tone for successful study. Frequently the failure of a period of study may be attributed directly to inability to put oneself in the proper physical condition to do good work.

Mental readiness will result in interest. Thorndike says:

> To a normal boy or girl, physical or mental work without interest is an impossibility. When one does the most uninteresting work he still does it from interest—interest in the avoidance of punishment, in maintaining his standing in class or in preserving his self-respect. Interest of some sort there must be. The problem of interest in teaching is not whether children shall learn with interest or without it, they never learn without it; but what kind of interest it shall be; from what the interest shall be derived.[1]

Kilpatrick says:

> "To take interest in doing anything is to have a mind-set towards it. Mind-set-to-an-end is purpose. If the child has a strong purpose, this as mind-set pushes him on to attain his end. This mind-set makes ready his inner resources for attaining the end. When he succeeds, these ready neurones and the success both mean satisfaction; the satisfaction means strengthening the bonds used. He learns by doing. His purpose helps him learn. It must be so. Mind-set, readiness, success, satisfaction, learning—they follow just this way." And he says

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[1] E. L. Thorndike, *Principles of Teaching,* p. 54.

later, "Interest is the natural, indeed the only, basis for effort; the stronger the interest, the stronger, if need be, will be the effort. . . . For best growth, three things should concur: a gripping interest, a challenge from the situation for the best effort that in us lies, and eventual success. From these three come growth."[1]

Lockwood similarly declares:

> In the long run the secret of study resides in our ability to bathe our thought, our task, our lesson in the stream of interest. The way to study successfully and joyously is to be interested in the thing that claims our attention.[2]

We have before us then the essential elements in the relationship of interest and study. Interest is the *sine qua non* of learning. Since study is the highest type of learning, interest must be present more intensely than in any other form of learning.

How may interest be supplied if it is not present? Lockwood thinks that the values of everyday life and of college life are not altogether removed from each other. He says:

> There are connecting threads, if only we can find them. We must learn to carry over from the things that we do like, or the things that we are absorbed in, fragments or filaments of interest which may be attached to the dull or hated study that we must master. Of course the surest and most natural way to bring this about is to live such an alert, wide-awake, and sympathetic life that the world speaks our language at whatever point we accost it. The greater our store of facts, images, experiences, and associations from the past, the more likely we are to find some point of contact between a new subject and an old one, and so to transfer interest from one to the other. If a subject seems hopelessly dry, one may approach it in some such way as this: It has interested other men; why should I be a stranger to it? Or, let one say to one's self: This subject, whatever its attractiveness or lack of attractiveness, is the sort of thing that comes to life out there in the world—the sort of thing that men are stumbling over on every human highway. What I study now is related to what I am going to do hereafter. . . . One may study with the thought of future travel. "He that would bring home the wealth of the Indies must carry out the wealth of the Indies." That is, we shall see only what we are prepared to see. Study with the thought of making yourself an interesting and resourceful conversationalist. Study, again, for the rewards of scholarship; or if this is no incentive, study in order to win honor for

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[1] W. H. Kilpatrick, *Foundations of Method*. Copyright 1925 by The Macmillan Company. Reprinted by permission. pp. 30, 31, 159.

[2] F. C. Lockwood, *The Freshman and His College*, p. 50.

your "bunch," your fraternity, your family, your country. And study, finally, if no other interest serves, because you are a man. It is nonsense to suppose that every step in education can be interesting. The fighting impulse must often be appealed to. Be ashamed of being scared at fractions, of being downed by the law of falling bodies; rouse your pugnacity and pride, and you will rush at the difficult places with a sort of inner wrath at yourself that is one of your best moral faculties. A victory scored under such conditions becomes a turning-point and crisis of your character. It represents the high-water mark of your powers, and serves thereafter as an ideal pattern for your self-imitation.[1]

Book says that all our early interests are hereditary, but by the time we become adults most of them have become greatly modified during the course of our experience and training and many newer ones have been added. We may make our interests largely what we will if only we know how. He suggests the following rules for building interests. (1) The student must expect to build acquired interests upon the early native interests or tendencies to respond which he has inherited. This may be done by watching other people who are intensely interested and imitating them; by introducing into his tasks an element of sport; by trying to beat his record in performing a given task; by imagining rewards which will come as the result of his efforts or by keeping in mind actual rewards which are sure to come from successful effort. (2) He must expect that acquiring information about a subject will increase interest in it. (3) He must arrange matters so that he can and will succeed with his work. No genuine or lasting pleasure can be attached to a subject or a performance unless the learner can succeed with his task. (4) He must apply himself fully and vigorously to his task.[2]

The student can see these steps by which interest may be developed exemplified among his acquaintances almost every day. It may perhaps be most clearly shown in the field of sports. There is a certain type of vigorous middle-aged man who scorns golf as an "old man's game" and refuses to be drawn into it by the ardent enthusiasm of its devotees. Such a friend of the writer's had for many years poked fun at golf. But on a holiday several years ago he was prevailed upon to play around the course. Contrary to his expectation he found himself interested almost at once, for driving reminded him of baseball, putting reminded him of croquet, and care in placing his shots reminded him of tennis, in all of which he had excelled. His first few shots were so effective that before the round was completed he was ready to acknowledge its fascinations and to take up golf as a regular pastime. The explanation of this quickly developed interest lies in the direct association of the new interest with earlier, deeply rooted interests, and the discovery that his earlier skills could be carried over into the new one and be made to result there in successful accomplishment. With increased skill in and knowledge of golf came increased interest.

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[1] Lockwood, *op. cit.*, p. 51f.

[2] W. F. Book, *Learning How to Study and Work Effectively*, p. 313f.

In a similar way interest in a given college course may be stimulated by deliberately setting out to increase one's knowledge of it with the expectation here also that increased knowledge will result in increased interest. One of the writer's students has been markedly successful during a recent semester in an English composition course. The writer noticed that this student came at regular intervals for references which she might consult on interesting related subjects. She discussed these topics with her classmates and friends, she presented an outline to the instructor before she wrote the composition, and she took pains to present the subject in the most effective way possible. The subsequent acceptance of some of her papers by college publications was the well-earned result of a carefully nurtured interest in the subject of learning to write.

To make his study successful, the student must be interested in it. Indeed, he must be more interested in it than in anything else at the moment of study. If he has no interest in it he must seek to build one. This can be done (1) by looking to his own interests, both native and acquired, to see if there is not some point of contact between one or more of them and the task before him; (2) by informing himself of the thing to be studied; (3) by making sure that success attends and follows his efforts; (4) by linking up constantly what he learns with what he has already learned so that his association systems may be rich in meaning and intimate in their contacts; (5) by launching himself on his work with a firm determination, thus overcoming that mental inertia which interferes with successful study.

Interest really goes back to a more general mental readiness which is variously called morale or "set." "Set" implies that there exists in the physical organism a tendency to react in a certain way when stimulation occurs. Mind-set implies that there is a tendency for the mind to react in a certain way when a certain mental stimulation occurs. Mind-sets are likes and dislikes, attitudes, appreciations, aversions. The way we feel and think about the aspects of life constitutes our morale.

Recent experiences in the World War as well as the studies of psychologists have demonstrated anew the supreme importance of morale, that subtle spirit which must be present in an individual or in an organization to make success a certainty. Spillman says:

> No man can really be true to himself who has not an abiding faith in himself. . . . Every man is first great or small according to his own calculation. Our mental collapse is the result of a poor system of bookkeeping. We strike off our trial balance, having underscored self-liquidating liabilities, and overlooked important assets. . . . "He can who thinks he can." Whoever believes a given task impossible achieves a result corresponding to his suspicions. Philip the Second built the resplendent Spanish Armada and sent her forth to crush the lesser English fleet. But the admiral of the Spanish Armada was given to seasickness and openly confessed to Philip his lack of confidence in the expedition. The Spanish Armada sailed straight into the defeat which corresponded to the mental pattern of its admiral. Contrast that adventure with the one financed by Ferdinand and Isabella in 1492. The Pinta, Niña, and Santa Maria were sickly craft when compared to the units of the Spanish Armada, and yet these tiny barks were ballasted and impelled by a mightier force than Philip the Second had put into his monsters of the deep. . . . All of the outposts of discovery and progress have been set by Columbuses. Faith has been the universal conqueror. Faith has been the foundation stone of all conquests of all ages. The Panama Canal is a colossal faith statue. The electric light, the steam engine, the telephone, the telegraph, the typewriter, the submarine, and the automobile are "I can" souvenirs left by men with a fondness for doing the impossible.[1]

Nowhere is morale more necessary than in the everyday affairs of life. The winning or losing of a football game lies many times in the confidence of the team, and not always in the perfection of their training or playing. The fight for life has been won again and again contrary to the predictions of physicians, because there existed in the fever-torn body a soul which had faith in its ability to recover health. Within certain limits, lessons are hard because we think they are hard, college tasks are difficult because we consider them difficult. He who attacks each new problem with a determination to win has won half the battle at the start. It's morale that makes effort count.

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[1] H. C. Spillman, *Personality*, pp. 27-32.

The first step to take then, in forming an efficient method of study is to provide those conditions which are essential to successful study. The student should be physically fit; he should be mentally ready by demonstrating a keen interest in the subject of study; and he should exemplify faith in his own ability and in the successful outcome of his undertaking. Physical fitness, a keen interest, and a right attitude are absolutely necessary for successful study.

The Second Step: Discover and Define the Purpose of Study

The second essential step in the study process is the discovery and definition of the purpose of the activity in which the student feels impelled to engage. If he studies the successful activities of men and women he will be struck by the part played by an impelling purpose. The search for the cause and the prevention of diphtheria exemplifies this significance of aim. The serious inroads which diphtheria made on human health and life, created a condition which spurred scientists on in their efforts to discover how it might be prevented. To prevent the disease, was their manifest object. When it was found that the disease was caused by the Klebs-Loeffler bacillus the experimental efforts of scientists were doubled with the result that the diphtheria toxin and the antitoxin were discovered in rapid succession. John Morley once wrote:

> Some great men—Gibbon was one and Daniel Webster was another and the great Lord Strafford was a third—always, before reading a book, made a short, rough analysis of the questions which they expected to be answered in it, the additions to be made to their knowledge, and whither it would take them. I have sometimes tried that way of studying, and guiding attention; I have never done so without advantage, and I commend it to you.[1]

If it is a reading assignment which must be mastered, the student should ask himself, "What is the purpose of this assignment?" If it is a laboratory experiment his query should be, "What am I expecting to find?" If it is a selection or a lesson which needs to be memorized, the questions should be, "What is the central idea which I am to master here?" "How is it related to what I already know?" Whatever the activity may be, whether it is a problem in advanced algebra or the chairmanship of a class committee, the student should analyze his purpose and his object in undertaking it. In no case should he plunge headlong into an activity simply because he feels impelled to engage in it. He should always hesitate long enough to ask himself, "Why am I going to engage in this activity?" "What is the need I am attempting to satisfy?"

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[1] *Aspects of Modern Study*, p. 71.

THE THIRD STEP: AVAIL ONESELF OF HELP TO ACHIEVE HIS PURPOSE

If the student feels a need which he has definitely defined, he will naturally look for help to satisfy his need. This is a third important step in the study process. The collection of data is always an important factor in the solution of a problem. We shall show in a later chapter that the reliability of judgment depends directly upon the completeness and the accuracy of the data available about the subject on which judgment is to be passed. Every trustworthy physician learns the full history of an ailment in the case of each patient before he prescribes treatment. Every reliable lawyer collects all the details of the case and informs himself about the legal aspects of the prospective trial before he permits his client to appear in court. The efficient traveler studies his time-table, and his guide and travel books to promote the success of his journey. The geologist collects all available facts before recommending to his employers the location of an oil well. Life activities of every kind demand the collection of data.

The student also must be a collector of data to be used to solve his problems. Where may help be found? First of all the student should look into his own past experience. Frequently a problem contains elements which have been met and solved before. The problem at hand may be the location of material for a term paper. The student may recall that the *Reader's Guide* or the *United States Book Catalog* has furnished material for the solution of a similar problem on a previous occasion. Perhaps one or both of these sources will furnish material now. A related source of help is reading. In a later chapter we shall show how the library is to be used, how books are to be read, as well as what books may be helpful.

Help may come also from group discussion. Many college courses are now organized for group work. In all colleges there are groups which meet regularly to discuss mutual problems. The student should not only contribute to such group discussion whenever possible but he should take his own problems to the group. If he has never tried it he will be amazed at the help which he may secure in this way.

Other sources of help are the instructor, observation, experimentation, lectures, and original sources. College authorities tend increasingly to accept the view that one function of the instructor is to give intellectual help to students. Many instructors provide opportunity for discussion at each meeting of the class, while others schedule regular quiz or discussion periods. Still others ask students to come to their offices for a discussion of their problems. As for the help that a student may get from observation that depends on his ability to keep his sense organs functioning efficiently. There is much to be learned in watching intelligently in experimental work and in listening intelligently in lecture periods. The student will be helped too by making a careful selection of the source or sources which promise the best help in solving difficulties. As college years pass, he should increasingly develop the ability to find his own materials.

THE FOURTH STEP: USE JUDGMENT IN SELECTING MATERIALS

Lockwood warns us:

> The ideas involved in a lesson are not to be introduced into one's anatomy merely as dead lumps of truth. They are to be reacted upon. Independent processes of thought must be set in motion. . . . The material presented for consideration must be passed upon. It is to be arraigned before the high court of one's own thought. . . . It is [the student's] court; he is trying the case for himself and not for another.[1]

A student often wonders what his attitude ought to be toward statements made by his instructors and toward those found in books. Shall he accept without question everything that he hears and reads in his college courses? Is it his business to assume that everything that is said and written by college instructors represents an accurate and truthful statement of the facts? Or shall he assume that everything that he hears and reads is open to serious doubt? Shall he refuse to accept anything until he has satisfactory proof of its accuracy and truthfulness? Or shall he assume a position between these two extremes? Shall he come to each lecture and to each reading assignment with an open mind, willing to weigh each statement and accept or reject it on the basis of its validity and reliability?

To assume the position of a passive recipient may imply industry in memorizing but it does not imply growth in wisdom. The student who passively accepts everything that he hears or reads soon finds himself in possession of a large number of contradictory facts which produce nothing but mental confusion; they must be examined, weighed, and the untenable ones discarded. On the other hand, to assume the attitude of an active objector to everything he hears or reads will tend to make a student a social misfit, an individual who cannot succeed because he fails to adapt himself to his environment. Both positions are objectionable because in life few situations are exclusively bad, and few are exclusively good. To the student to whom everything is true and nothing is false, and to the one to whom everything is false and nothing is true, reasonableness and discrimination are impossible. The student who desires to cultivate good judgment assumes an intermediary position. He believes that some things which he hears or reads are good or less good, while some are bad. He sets himself up as a judge to determine what to retain and what to discard. He examines statements to discover their merits and their defects. He weighs, considers, and judges before he accepts or rejects. After he has done this he gladly accepts some things because his experience and the manner of presentation justify it; he rejects other things equally emphatically because his scrutiny of them has revealed some deficiency.

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[1] F. C. Lockwood, *The Freshman and His College*, p. 55f.

The judicial student is critical. Bacon once said, "Read not to contradict and confute, nor to believe and take for granted, not to find talk and discourse, but to weigh and consider." This indicates that to be critical means something other than to object to, or to find fault with anything. To be critical, in its true sense, implies an ability to be positive as well as to be negative. The real critic is willing to give credit for the good quite as promptly as to attach blame to the bad. He is impartial. He is more often constructive than he is destructive.

Exercise of judgment will be called for in one's reading. There will be constantly present the problem of selecting those facts which bear on the problem at hand. Discriminating students soon discover that only small portions of assigned readings really contribute to the topics under discussion. They make it a point to find out the really important passages and devote intensive study to them. Listening to lectures and the accompanying exercise of making notes likewise call for an exercise of judgment in selecting the pertinent materials. A later chapter on note-making will give suggestions on how to select what is pertinent.

Exercise of judgment is necessary too in numerous experiences outside of the classroom. There is the need of a wise choice of food, of clothing, of friends, of pleasures; every day in fact offers a multitude of opportunities to exercise judgment. Sound judgment in all of these matters enables us to live a successful and happy life.

There exist in the world two conflicting philosophies in regard to the final weight of authority in matters of conduct. One philosophy, considering the individual human being as ignorant and incapable, regards the source of authority for his conduct as external and imposed upon him by someone else. Aristotle was for centuries considered the final authority in matters of thought. His assertion that heavy bodies would fall to the earth faster than light bodies was believed for generations. Similarly, people believed for a long time that the earth was flat because early scholars had said so. The other philosophy considers each individual the final source of authority in matters of his own conduct. He must choose for himself the basis of authority on which his conduct shall be reared. This philosophy considers that only thus can progress be made, for progress depends upon the possibility of individual choice.

The chief objection to the acceptance of an external source of authority in conduct is that the authority may be erroneous and the error may not be discovered. Even if its error is discovered the hold of ancient authority is hard to loosen. When we make an inner authority the basis of conduct we increase the possibility of change and hence the probability of progress.

The chief danger in both philosophies is the closed mind. Study, if it is done right, will develop an open mind, the tentative attitude. This tentativeness is evident everywhere among scientists, largely because they have found their theories upset so frequently that they hesitate to make any definite assertion. Take the experience of physicists in the study of matter, as an example. The earlier students of matter insisted that it was composed of earth, water, fire, and air. Later, scholars suggested the elements gold, silver, and so forth. Still later came the discovery of molecules, then of atoms and now of electrons and protons. And no modern scientist now is willing to claim that physics has yet written the final chapter about the composition of matter.

If in the practical affairs of life the tentative attitude is so important the student should certainly adopt it. He should view his experiences both as ends and as means. Experiences should serve as ends when they achieve certain purposes, and they should also serve as means to further change and progress. Thus, to write a paper in a course should represent not alone a contribution as far as the unit of work covered is concerned. In addition to this, the learnings which come with the preparation of that paper should also aid in the preparation of papers in the future. In this instance learning has become both an end and a means. The student should say to himself when he has solved a problem, "I now know the solution of this problem in the light of data at my disposal. I am keeping my mind open for new data which may modify my conclusion. If new data are found I shall scrutinize them carefully and either modify my conclusion in the light of my findings or reject them and have the courage to stick to my original conclusion. But my mind must remain open. When once it is closed, progress ceases for me."

THE FIFTH STEP: ORGANIZE DATA OR EXPERIENCES

A fifth step in the study process is the organization of the experiences or the data which have been collected. William James says, "After discrimination, association." Every successful life activity exemplifies careful organization. The construction of a building, the staging of a play, the operation of a mercantile concern, the teaching of a class, these all illustrate organization. Lectures as a rule are carefully planned and textbooks represent a high type of organization.

Heckert shows that the first step in organization is to have many related facts at one's command. He tells of a high school boy who attempted to write a composition on "Mischievous Billy." When asked what he was going to say, the boy replied, "I am going to tell how Billy went up town and a lady asked him, 'How do you do Billy?' and Billy said, 'I do as I please.'" Heckert then asked the boy if there was not someone in his neighborhood who might well be called "Mischievous Billy." Such a boy was immediately recalled and his activities became the basic material of the composition.[1]

In his discussion of reasoning and imagination, two important types of study, Gates declares that much

> . . . . depends upon an abundance of ideas, particular and general facts and principles. In reasoning, we pick and choose among

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[1] H. B. Reed, *Psychology of Elementary School Subjects*, p. 295.

facts, view this and that together. Few people are able to reason about the Theory of Relativity, Evolution, or Electro-therapy because of a lack of the essential stock of facts. . . . An eminent thinker once compared the situation during reasoning to two chambers, a main chamber in which manipulation and study were going on, or in which the leading ideas were being rehearsed, and an antechamber crowded with ideas seeking an entrance to the main room. Unless the antechamber were well filled little could be done. . . . If we are to become competent thinkers in any line, the first, and by all odds the most important thing is to accumulate experience and master the facts in the field.[1]

A second important fact to remember in the organization of experiences is the law which William James laid down years ago: "When two elementary brain-processes have been active together or in immediate succession, one of them, on re-occurring tends to propagate its excitement into the other."[2] Modern psychologists agree that ideas which have been experienced together will be recalled together when the same or a similar stimulus occurs. The implication of these statements is that the way to make sure that ideas will be recalled together is to have them occur together in experience. One of the secrets of effective organization then lies in our ability to make ideas occur properly related in experience so that they will function in later life in the same relation.

The organization of data or experience may be made more efficient by resorting to certain special devices which we have now developed. One of these is the outline, which calls for proper coördination and subordination of materials read or heard or seen. Other devices are the summary, the paraphrase, marginal notes, and so on. These devices will be fully discussed in the later chapters on reading and note-making.

THE SIXTH STEP: MAKE USE OF WHAT HAS BEEN LEARNED

A sixth step in study is the use that one should make of the newly acquired information, ideas, or associations. If the result of the fifth step in the study process really meets the need suggested by the first step, and if the other steps have been taken properly, the newly acquired experience will be fixed sufficiently so that it may be recalled for a time, but it needs exercise if it is to stick in the mind for long. Use is so important because there is the danger first, that bonds will become weak by disuse; and, second, that bonds which have only temporary value may become fixed. It must be admitted that many experiences which come as a result of study occur only once in a lifetime. A man may be driving an automobile and run out of gasoline far from a source of supply. The discovery that he has run out of gasoline under these conditions should lead him to follow a practice of watching the gasoline tank, to make sure that he always has a sufficient supply for every emergency. The result of experience in this case should be positive as well as preventive in nature.

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[1] A. I. Gates, *Elementary Psychology*. Copyright 1928 by The Macmillan Company. Reprinted by permission. p. 441f.

[2] William James, *Psychology, Briefer Course*, p. 256.

In class work much emphasis is placed on memorizing. If the steps which we have suggested are taken in order the nervous system will remember of its own accord. We have previously emphasized the importance of learning our reactions in the way in which we shall use them. If we have no use for them there is no sense in learning them. Memorizing is really a process of correct use of reactions and since use of reactions implies learning, memorizing is not a separate and distinct activity but it is merely another name for learning.

Lockwood says:

> Knowledge results in permanent enrichment only when it has been put into play; that is, it must be related to life and must flow out in action. . . . It is not to be thought for a moment that the final end or outcome of a college assignment is the presentation of it to the instructor in recitation or examination. . . . Knowledge that is worth while will become so much a part of the student that he will forget when and where he got it. Not only shall he have it; it will have him. . . . no lesson can ever be said to have been mastered until it has entered into and become a part of one.[1]

William James exhorted his students to seize the very first opportunity to act on every resolution made and on every emotional prompting experienced in the direction of the habits one aspires to gain. He says:

> No matter how full a reservoir of maxims one may possess, and no matter how good one's sentiments may be, if one have not taken advantage of every concrete opportunity to act, one's character may remain unaffected for the better. With mere good intentions, hell is proverbially paved.[2]

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[1] F. C. Lockwood, *The Freshman and His College*, p. 56.

[2] William James, *Psychology, Briefer Course*, p. 147.

Use of experience is so important, then, because it aids in the fixation of desirable behavior. It helps to make available habits which increase the efficiency of living and to build moral character which ennobles life.

THE SEVENTH STEP: BUILD PERSONALITY

There remains a seventh step in the study process which is frequently neglected. Earhart emphasizes the development of self. She says:

> Any method of study which disregards individuals, disregards also the fundamental difference of interests, of capacities for working, and of ways of working. . . . In studying, it is an important consideration to preserve and develop one's personality, to exercise initiative, and not to subordinate one's own ideas to those of others without due consideration; otherwise one becomes a mental nonentity; a "passive recipient," and the whole process of study loses its value as a means of training and as a means of arriving at truth.[1]

Kilpatrick also says that "every time a person responds in any way he has in so far contributed in some fashion, for good or ill, to his personality." This may be either tearing down or building up, but in any case it changes the individual, and his personality is modified.

Lockwood declares:

> The student owes it to himself to preserve his intellectual independence and integrity. No one can think for him. He should let no one coerce his will, or secure his consent to that which he does not believe. The student is the supreme end for which the college exists. The gentleman will, of course, honor his instructors and will be considerate of them in every way. But the faculty is not the center of gravity of a college. A student has the right, as an honest and earnest seeker after truth, to weigh himself over against the whole college establishment, considered as an organization fitted to supply the need which led him to enter college.[2]

The final effect on personality, then, becomes the criterion for judging the value of any study activity. An individual may in a very efficient manner take all of the first six steps suggested above, but the efficiency of the process as a whole is to be finally determined by its effect on his personality. He may, for example, find himself in a circle of bandits. The lure of the bandit's life appeals to him as a highly romantic way to make a living. He has no hesitation in providing the conditions essential for successful study. He is ready, he is fit mentally and physically, his attitude harmonizes perfectly with the code of the bandit world. His purpose is to achieve wealth and fame by stealing and robbing. Such a purpose may be exceedingly intense. To be successful this prospective bandit looks for help in many directions. He gets the advice of experienced bandits, he accompanies them on their raids, he revels in their exploits. These experiences he organizes so that his efficiency may be increased. His judgment is at work constantly and his practice in outlawry contributes toward what is to him, ultimate success. But although every step in the study process may have been taken and taken efficiently, the result is deplorable because this study process has produced a personality that is a menace to society.

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[1] L. B. Earhart, *Teaching Children to Study*, p. 53f.

[2] F. C. Lockwood, *The Freshman and His College*, p. 58.

Another individual may decide to become a scout master. He too has an intense preliminary interest. He provides the essential conditions for successful study and he has a driving purpose. He secures information by reading, by observation, and by association with other scout masters. He exercises judgment and organizes his experiences for efficiency. A period of apprenticeship gives him opportunity for practice. All of the progressive steps in the study process are taken by the prospective scout master just as they are taken by the prospective bandit, but the result of the process is far different. The prospective scout master has developed the traits of a desirable personality by increasing his ability to become a constructive force in society. While the study process makes the bandit a menace to himself and to society, it makes the scout master a benefactor. The final effect on personality, therefore, constitutes the measure of the quality of any study activity.

Philosophers of education have recently called attention to the lack of emphasis in our college work upon the building of personality. Undoubtedly it is true that there are students in American colleges who go through four years of college life without materially improving their personalities. There are some who succeed in securing grades and credits and even degrees who nevertheless fail in this most important purpose of a college career. On the other hand we may assert with confidence that most students who complete the full four years of college and who really learn to study, have materially changed their personalities for the better.

SUMMARY

In order to study successfully the student should pay close attention to the following seven rules of study:

1. Provide the conditions essential to successful study—he should be ready, be fit, be interested, and have faith in himself.
2. Discover and define the purpose of his study activity.
3. Avail himself of help to achieve his purpose: by reading books, magazines, and other printed matter; by investigating, experimenting, questioning his instructor, and so on.
4. Use judgment in the selection of data and experiences so that the results of his search may meet his needs.
5. Organize data or experiences in such a way that living will be more efficient; reconstruct experience; build association systems.
6. Use what has been learned; repeat the learnings if necessary; if they are learned right in the first place they will be remembered better and longer.
7. Build the results of study into a growing personality; the building of a desirable personality is the final criterion by which all study activities should be evaluated.

Let us suppose that a student is asked to make a report on "The Development of Means of Communication in the United States." He will need to see to it that he has at the outset a prevailing physical fitness and an eagerness to undertake the report. He will need to demonstrate his readiness by providing himself with the essential paraphernalia for successful study. Before proceeding further he will marshal the ideas which he already possesses on the subject. He will then make a tentative outline of what he proposes to do and define clearly what he expects his study to yield. Then will come the collection of material. In order to be successful he will need to be familiar with many sources. In consulting these sources he will find many suggestions and references. As he follows up these suggestions or reads the references he will need to exercise judgment in the selection of material. He will need to guard against going far afield in alluring bypaths. After he has collected his material and has critically examined it, he must organize it. Important facts will force less important ones into subordinate positions. As the work proceeds the whole undertaking will acquire new meaning. New mental associations will be made and old experiences will be reconstructed. From his study will come certain results which will be useful to him in understanding and solving other problems. Throughout there will occur opportunities to develop patience, honesty, thoroughness, insight, and many other qualities which are desirable in personality. Such a procedure exemplifies self-directed conscious learning. It represents efficiency in result, increase in understanding, and growth in personality.

The discussion in this and the preceding chapters has revealed a need for familiarity with a number of activities in order to increase the successful application of the seven rules of study. The student will want to know more in detail how he may develop and maintain physical efficiency, how to use the library, how to make notes, how to increase his efficiency in reading and in fixing learnings, how to think, how to arrive at reliable judgments, how to measure achievement and to enjoy life. To these problems we shall turn our attention in succeeding chapters.

QUESTIONS

1. What is meant by the assertion that to be successful in study the student must be "ready"?
2. What is the relationship of interest to learning? To study? To living? If one is not interested in his school work how may he develop an interest?
3. Why is one's mental attitude so important in study?
4. Of what significance is purpose in study?
5. Where may a student find help to achieve the purposes of his study activities?
6. How should a student exercise judgment in studying? Why? What is meant by the term "tentative attitude"?
7. What suggestions should be kept in mind in the organization of experiences?
8. Why is it important to make use of what one has learned?
9. Explain this statement: The final test of the value of the study process is its effect on personality.
10. Name the seven steps in the study process.

EXERCISES

1. Check your method of study in each of your class subjects against the seven essential steps of study. How does your method compare with the ideal method given?

2. Examine the subject in which you are interested least and see if you can increase your interest in it by following the suggestions made in the last chapter. (Sel. Ref. 1, 3 and 6.)
3. Arrange the following activities in the order of their interest to you, putting the most interesting first. Are you studying any of them at the present time? If so, how do they exemplify the steps in the study process?
   (a) Playing tennis.
   (b) Learning the conjugation of a verb in a foreign language.
   (c) Writing a theme in English.
   (d) Eating candy.
   (e) Dancing.
   (f) Playing bridge.
   (g) Performing a laboratory experiment in a science course.
   (h) Listening to a lecture on genetics.
   (i) Reading the *Literary Digest*.
   (j) Reciting in a class in American History.
   (k) Outlining a chapter in a book on Sociology.
   (l) Reading *True Story*.
   (m) Playing basketball.
4. The German and French languages distinguish sharply between "understanding" and "knowing" something. What is the difference?
5. Show how understanding may be increased by engaging in the following activities suggested by Headley: (a) having an opinion; (b) being critical; (c) seeing parts together; (d) discussing views. (Sel. Ref. 5.)
6. How does Thomas's list of principles and rules for effective study differ from those suggested by Earhart and McMurry? How is it similar? (Sel. Ref. 4, 9 and 10.)
7. Write an essay in which you show how Chapter IV and Chapter V have helped you to understand the study process and to discover the way in which you may improve your method of study. Be specific. Show what changes you expect to make in your method of attacking each of your class subjects. Tell also how your activities outside of regular class work may be affected.

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CHAPTER VI

CONDITIONS THAT FAVOR WHOLESOME LIVING

The success of every worker—whether professional or technical—depends much upon how he feels physically and in what kind of an environment he works. Physical fitness is so important because our mental and spiritual life is acted upon by the health of our physical body. Mental, spiritual, and physical good health are essential to a balanced, wholesome life.

The New Emphasis on Health in American Schools

"Fortunately the subject of health is receiving much attention in our schools and colleges today." A generation ago virtually nothing was done to develop or to maintain desirable health habits. Today one of the seven cardinal objectives of education is physical efficiency. The whole educational program from the kindergarten through the university keeps good health in mind. "Already we are witnessing the beneficient influence of this new emphasis on health." Sanitary and fireproof school buildings are being constructed, the health and physical development of the school child is being supervised by nurses and doctors, school equipment is being changed, even our curriculum and our methods are being modified to meet the demands of our new health program. Perhaps the most important contribution which has been made up to the present moment is the standardization of certain health requirements. The Health Crusaders of the Junior Red Cross have made an excellent list of health rules. A somewhat more extended list has been set forth by Fisher and Fisk in their excellent book *How To Live*.[1]

The Sixteen Rules of Hygiene.

I. Air.
  1. Ventilate every room you occupy.
  2. Wear light, loose, and porous clothes.
  3. Seek out-of-door occupations and recreations.

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[1] Irving Fisher and E. L. Fisk, *How to Live*, p. 138f.

   4. Sleep outdoors, if you can.
   5. Breathe deeply.
- II. Food.
   6. Avoid overeating and overweight.
   7. Eat sparingly of meats and eggs.
   8. Eat some hard, some bulky, some raw foods.
   9. Eat slowly.
   10. Drink sufficient water.
- III. Poisons.
   11. Eliminate thoroughly, regularly, and frequently.
   12. Stand, sit, and walk erect.
   13. Do not allow poisons and infections to enter the body.
   14. Keep the teeth, gums, and tongue clean.
- IV. Activity.
   15. Work, play, rest, and sleep in moderation.
   16. Keep serene and whole-hearted.

GUARDING THE GATEWAY TO THE BODY

It will be apparent from this list of rules that there are many things which need attention daily as long as we live. One of these is the gateway to our body, the mouth and the nose. Most of the materials which the human body uses for its sustenance enter through this gateway. The teeth are the part of the mouth which need most attention. It has been discovered in recent years that the health of an individual is largely dependent upon the quality and the condition of his teeth. Recent dental surveys show that more than three-fourths of all school children have defective teeth. We know that an abscessed tooth may poison the system to such an extent that the vital organs may be injured permanently. Most cases of rheumatism come from bad teeth. A young woman in a university freshman class a few years ago complained of the action of her heart. Upon examination it was found that an abscessed tooth had actually brought on endocarditis. Every student should make it a habit to brush his teeth at least once daily, and he should visit his dentist at least once each year, so that cavities may be discovered early and other defects remedied.

There are in the human body many vestiges of organisms which functioned long ago. At the present time, certain organs are going out of use and the body is confronted with the necessity of eliminating them. Two such organs are tonsils and adenoids. The tonsils are located in the throat and the adenoids are usually found in the back part of the nose. The tonsils are inclined to become enlarged or to decay, and certain undesirable microörganisms tend to utilize the tonsils as a place for growing and multiplying. Frequently tonsils become so badly infected that the poison from them saturates the whole system. People with such an affliction often appear stupid when they are in reality normally intelligent. There are many proofs that tonsils and adenoids frequently reduce the efficiency of individuals to such an extent that they cannot enjoy life, nor can they do their work in a satisfactory way. If an individual has tonsilitis frequently or if he feels sluggish and out of harmony with himself and with the world, he should consult a good physician or, if possible, a throat specialist. Diseased tonsils and enlarged adenoids are not curable. The only thing to do is to have them removed.

AIR, FOOD, AND WATER

It is important then that this gateway to the vital organs be clean and in healthy condition so that the materials which come into the body may be admitted under the most favorable conditions. There are three different materials which the body needs for sustenance, air, food, and water.

Air is of vital importance to human life since men are air-breathing animals. The fish lives in an atmosphere of water, although the water must be saturated with air. The frog lives in an atmosphere of water or air, although the water, again, must be saturated with air. Man can live only in an atmosphere of air, and the air must meet certain requirements if human life is to be efficient. It must be (1) of the right temperature, it must be (2) fresh, it must be (3) in circulation, and it must be (4) moist.

First, although human beings can adapt themselves to a rather wide range of temperatures, the most efficient living takes place in air with a temperature of about seventy degrees Fahrenheit. When an individual is subjected to air whose temperature is as low as forty degrees Fahrenheit or as high as one hundred ten degrees Fahrenheit, he has to devote so much effort to adapting himself to such extremes of temperature that he can pay little attention to work. It may be said at this point that human beings are not all alike in their needs so far as the temperature of the air is concerned. Some persons find sixty degrees Fahrenheit the most comfortable, while others prefer a temperature as high as eighty degrees. On the whole, Americans appear to do their best work in air whose temperature is slightly above seventy degrees Fahrenheit. Europeans on the other hand, seem to do their best work in air whose temperature is somewhat below seventy degrees. Americans traveling in European countries during the winter months complain constantly of the cold rooms in hotels and rooming-houses; while Europeans traveling in the United States complain about our over-heated rooms and houses. Every student should study himself to determine at which temperature he can do his best work.

The second important qualification which air must possess is that of freshness. This is particularly important during the winter months. Throughout the summer people naturally have the doors and windows of their homes open so that the air is usually fresh. In the winter months, however, when our doors and windows are closed the same air is likely to be kept constantly in circulation. Many persons assume that if air is cold, it is fresh. This is by no means always true. The only way to make certain that the air is fresh is to open the windows several times each day thus flushing the room, or better still, to open a window several inches at the top or at the bottom and leave it open day and night. If the window is open at the bottom, it is well to provide a window-guard so that the air may be forced upward into the room and thus obviate a draft. In our modern school buildings we provide a constant supply of fresh air, but in most of our homes we have not yet worked out devices for such a supply. Each student must, therefore, make this problem his own and assure himself that the air which he breathes is fresh and pure.

The third important qualification of good air is that it be in circulation. Homes which are heated by hot air usually have this matter taken care of through cold as well as hot air registers, by means of which the air is kept in constant circulation. If the student will keep open a window or two depending on the temperature, he will thereby guarantee a supply of fresh air and he will also make sure that the air is in circulation.

The fourth important qualification of air is moisture. This condition of the air is commonly referred to as its humidity. Dry air is, in most cases, dangerous to health. If the student works in a room which is heated by steam, he would be wise to set an open vessel filled with water on the radiator or elsewhere in the room. If the room is heated by a hot-air furnace, a container on the furnace usually provides the necessary moisture.

Every human being should spend at least a part of each day out of doors. One should make it a practice to breathe deeply so that every part of the lungs may be thoroughly oxygenated. A student may demonstrate to himself the value of deep breathing by walking around the block after an extended period of study. He will find that a brisk walk in the fresh air will renew his efficiency wonderfully. He should keep in mind, too, the desirability of breathing through the nostrils. If he finds it difficult to do this, he should consult a physician or a nose specialist to see if obstructions in the nostrils need to be removed. Mouth breathing interferes with the normal functioning of the glands in the mouth and if practiced over an extended period will affect the teeth. Another advantage of out-of-door life is exposure to sunlight which is fully as valuable to the human body as is fresh air. Physicians tell us that the ultra-violet rays of the sun are indispensable to good health.

Besides air, the human body needs food for the sustenance of life. Just as air provides the oxygen which oxygenates the human body so food provides materials for the blood, heat for the body, and such reserve materials as the body needs to replace worn-out tissues and to safeguard life generally.

There has been much difference of opinion in recent years about the real functions of foods. Our problem is in the first place, what to eat. Health is dependent not only upon the right amount of food, but also upon the right kinds of food in the right proportions. Dietitians usually speak of three kinds of foods, proteins, found chiefly in milk, meat, eggs, fish, fowl, peas and beans; fats, found in butter, oils, and cream; carbohydrates, found in cereals, bread, potatoes, sugar, and syrups.

The appetite for food demands satisfaction, and on the whole, appetite is a fair guide to the amount that should be eaten. But recent experiments have demonstrated that the amount of food is not so important as the kind of food, and the kind of food which is particularly valuable is food which contains vitamins. A person may select highly concentrated foods which satisfy the appetite but they may fail to supply the materials which the body needs. For example, a person may eat a pound of candy which will readily satisfy his appetite, but it will not supply the number or kind of vitamins which the body demands. Fisher and Fisk therefore, speak of fuel food, building or repair food, regulating food, and fats. About 85 per cent of the fuel for the body should consist of starches, sugars, and fats, using starchy foods in the largest amount, fats next, and sugars least. Building or repair foods consist of proteins and mineral salts found in milk, green vegetables, fruits, whole grain cereals and egg yolks. Regulating foods consist of vitamins, mineral salts, water, bulk foods such as raw lettuce and cabbage, hard foods for the exercise of teeth and jaws, such as crusts, celery and nuts.

Vitamins are described as "minute substances present in a very small quantity in a number of foods and apparently necessary to keep the body in health." The absence of these elements appears to lead to poisoning of the body, which results in such disturbances as scurvy, beriberi, and other so-called "deficiency" diseases. Five types of foods containing vitamins are recommended:

(1) Foods containing the three vitamins in protective quantity (fat soluble A, water soluble B, water soluble C).—Tomatoes (canned and fresh), cabbage (fresh, raw), carrots, cauliflower, peas (fresh), spinach, turnips, lettuce, milk, liver.

(2) Foods containing chiefly growth- and appetite-promoting vitamins (fat soluble A, water soluble B).—Milk, eggs, whole cereals (rice, rye, oats, barley, wheat), sweet potatoes, parsnips, kidney, brain, sweetbread, fish roe, codfish, cocoanut, almonds, hickory nuts.

(3) Foods containing chiefly anti-scorbutic and appetite-promoting vitamins (water soluble B, water soluble C).—Apples, bananas, oranges, grapefruit, lemons, limes, peas, potatoes, onions, raisins.

(4) Foods containing chiefly appetite- and nutrition-promoting vitamins (water soluble B).—Yeast, milk, eggs, oranges, kidney beans, navy beans, Indian cornmeal, Brazil nuts, chestnuts, English walnuts, filberts.

(5) Foods containing chiefly growth-promoting vitamins (fat soluble A).—Butter, cream, codliver oil, salmon, herring, cheese, egg yolks.[1]

The ideal menu has not yet been discovered. Of one thing we are certain however, that most of us should eat less meat and less starchy food and more vegetables and fruits.

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[1] Fisher and Fisk, *op. cit.*, Chap. II. See also C. H. Goudiss' *Eating Vitamines*, Part I.

In the second place we should devote some attention to when to eat. In some European countries people eat from five to seven times a day. In the United States, we are advised by specialists in the field of dietetics to confine our eating to three meals each day. Although this suggestion has been widely spread abroad, many people eat three main meals each day and in addition eat lightly between meals. Unfortunately, the materials which are eaten between meals are not always as desirable as the materials which are provided at regular meal time. A student for example, may consume foods at regular meal-time which are entirely in harmony with our best known rules of nutrition, but he may eat foods between meals that will actually interfere with his health. If he finds it difficult to wait from one meal to another, he should do one of two things, either drink water when he feels hungry, or eat fruit. It is doubtful wisdom to indulge the practice of eating just before one goes to bed. This is common among students, especially after their week-end parties. While midnight lunches may be conducive to social gaiety they are almost certainly not conducive to good health. It would be far better for a student who has engaged in strenuous social activities late into the night to appease his appetite by drinking a glass of milk instead of artificial drinks, or by eating fruit instead of rich pastries.

It is important in the third place for young people to know how to eat. One should eat his meals in a leisurely way. Headley says:

> Most college students are to be severely criticized for hurried eating. Hurry is a chief cause of superficial mastication with its long train of evil consequences. For the sake of its digestion and for the sake of its enjoyment food should be thoroughly chewed before it is swallowed. . . . The meal hour should be one of relaxation and pleasure. Even for purely physiological considerations this is highly desirable. The meal hour should be dedicated not so much to eating as to conviviality.[1]

It is a well-known fact that people who live by themselves frequently lose their appetites and often do not eat either what they should or as much as they should. The presence of congenial friends as well as a congenial atmosphere will do much to increase the enjoyment of a well-cooked meal.

Lockwood declares:

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[1] L. A. Headley, *How to Study in College*, p. 12f.

It is not a good thing to study soon after a hearty meal; for, since the digestive organs are heavily taxed at this time, they summon a large supply of blood from the brain and the other parts of the body. And, since there cannot be a proper supply of blood in both places at the same time, either the digestive organs will be robbed of their supply, with the result that digestion cannot be carried on properly, or the brain will be so impoverished that it must of necessity do poor work. For this reason, too, meal-time should be an occasion for leisurely conversation and good-fellowship; and for the same reason the time for at least a half-hour after a heavy meal should be spent either in the enjoyment of a short nap; or with music or light reading; or in some form of agreeable and easy physical exercise.[1]

The third essential that the human body requires is water. The physiologist tells us that excluding the bones, water makes up about three-fourths of the body weight. Nature has provided us with thirst to warn us of the body's need of water. In a general way, the individual may safely rely upon this instinct to satisfy the need of the organism. This is particularly true if he engages in adequate outdoor exercise. Unfortunately many persons living a sedentary life during the winter months, do not do this. They shut themselves up in over-heated, ill-ventilated rooms and give their bodies little or no exercise with the result that the normal thirst for water in the organism does not arise. The body needs water under all conditions, but somehow thirst often does not function as it should under artificial living conditions. A good rule is to drink not less than six glasses of water each day. There is little danger of drinking too much water. Water is necessary for the proper digestion and assimilation of food. It is necessary for flushing the entire digestive tract and for keeping in operation all the organs of the body. One of the best ways to prevent disease is to drink an abundance of water.

Since water is so important, it is, of course, essential that it be fresh and pure and that its temperature be adapted to the temperature of the body. The practice of serving ice-water in public buildings, in restaurants and hotels either in summer or in winter is objectionable from the point of view of health. Drinking water, while it may safely be cool or even cold, ought not to be iced, since through chilling the stomach below normal bodily temperature, its functions are seriously interfered with.

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[1] F. C. Lockwood, *The Freshman and His College*, p. 54.

A word should be said about drinking water at mealtime. Some physiologists advise us not to drink water while we are eating. Instead, they recommend the drinking of water before and after meals; but this advice is probably somewhat over-emphasized. To drink water during the meal is objectionable only if it is done to wash down food. If the individual is careful that his mouth contains no food when he drinks water, the practice of drinking water during the meal is desirable rather than otherwise.

Air, food, and water as we have described them are sufficient for the sustenance of the human body. But many persons use also in some form opium, morphine, cocain, heroin, chloral, acetanilid, alcohol, caffein or nicotin. How much the use of these, particularly of alcohol, coffee and tobacco, affects health is a matter of dispute even among physicians. The factors involved are so many in number and so complex in nature that much has been said and written for and against their use. To discuss all of these factors fairly would demand more space than we have at our disposal. We shall suggest therefore that each student should, if possible, take courses in which the nature of these materials may be studied under expert guidance, read the discussion of men and women who have studied the effect of the use of these materials on student achievement, on health in general and on longevity,[1] and consult his family physician.

ELIMINATING WASTE AND POISON

It is just as important to give attention to the elimination of wastes and poisons from the body as it is to be careful about the materials which come into the body. If life is normal, the processes of elimination are practically automatic. Unfortunately, modern life and especially the life of the student is highly artificial. Most students come from an environment in which they have been very active physically in the out-of-doors. Many come from farms where occupation is chiefly physical. In any event such students as come to college after a vacation period in which they have been active physically, are likely to find life in college much more sedentary. The student is compelled to sit for hours in classrooms and still longer in libraries, in study halls, and in his room preparing his lessons. Such a change is sure to affect the processes of elimination. Fisher and Fisk tell us:

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[1] For example, Fisher and Fisk, *How to Live.* Funk and Wagnalls Company, 1923, Chapter III and pages 298-365.

> The life processes produce poisons as by-products. Were it not for the liver, which destroys many poisons, and the kidneys, bowels and skin, which eliminate poisons, we would speedily die. Poison is the main factor in causing old age and death not directly due to injury. It will be seen, therefore, how extremely important it is to reduce our daily dose of poisons and to eliminate as thoroughly and promptly as possible such poisons as are unavoidably introduced into the body.[1]

These authors show that the kidneys are the chief organs for such elimination and that water is the chief agent. A sufficient quantity of water is therefore essential to a proper flushing of the kidneys so that the accumulating poisons may be eliminated. Water is important also in aiding the bowels to eliminate poisons. Fisher and Fisk say further:

> If the human body be likened to a steam engine, its wastes correspond to the ashes. The injury which comes from the retention of the body's waste products is of the greatest importance. . . . Abnormal conditions of the intestines are largely responsible for the common headache malady, and for a generally lowered resistance, resulting in colds and even more serious ailments. Constipation is extremely prevalent, partly because our diet usually lacks bulk or other needed constituents, and so retards elimination, but partly also because we fail to make the effort to eliminate regularly, thoroughly, and often. . . . Free water-drinking between meals when the stomach is empty, and especially before breakfast, is beneficial in constipation. . . . Foods which are especially laxative are prunes, figs, most fruits except bananas, fruit juices, all fresh vegetables, especially greens of all sorts, wheat-bran, and the whole grain cereals. . . . Foods with the opposite tendency are rice, boiled milk, fine wheat-flour in bread, cornstarch, white of egg.[2]

Another type of elimination which deserves mention is perspiration. Perspiration plays an important rôle in the economy of the human organism. If we exercise properly, there is little difficulty in this respect. Unfortunately, we do not always take the time to give our perspiratory system opportunity to function properly. If a student finds it impossible to spend a part of the day out-of-doors, he should engage in some kind of indoor exercise. In most of our colleges exercise strenuous enough to produce perspiration is required in the program of physical education. Many people erroneously believe that a large amount of time must be devoted to physical exercise daily. This is not necessarily true. Fifteen or twenty minutes, two or three times daily, devoted to the proper kind of exercise will keep the perspiratory system functioning properly.

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[1] Fisher and Fisk, *op. cit.*, p. 61.

[2] *Ibid.*, p. 64f.

Caring for the Exterior of the Body

In order to keep the whole body functioning with maximum efficiency, it is important to care for external parts of the body as well as to pay attention to the materials which go into the body and to the processes of elimination. Among these external portions of the body which need attention are the eyes. The eyes are used more in school work and in life generally than any other sense organ. Not to have eyes is like living in a house without doors or windows. To have eyes which function properly is like living in a house gloriously flooded with an abundance of light through windows and doors. The large amount of reading which is demanded of college students makes it highly desirable to keep one's eyes in the best possible condition. Most persons do not realize how intimately the eyes are connected with the rest of the organism. A number of years ago, the writer was troubled by spells of dizziness. He was nervous and suffered frequently from nausea. He supposed that his difficulty was one of digestion and consulted a physician. After a careful examination, the physician could discover no cause for the trouble in the digestive organs, and he therefore recommended that an eye-specialist be consulted. The result of the consultation was a pair of glasses properly fitted and the removal of the troublesome disorders.

The student can do much to maintain the efficiency of his eyesight. Here are some suggestions: In reading hold the book at a proper distance from the eyes and in such a position that they will have a maximum opportunity to observe the printed material. Make sure that the light is adequate and that it falls on the book from the rear. Eliminate cross-lighting and make sure that no shadows fall on the page. Remove such objects as will reflect light into the eyes or upon the page. The student should be careful about the color of such materials as he has an opportunity to select. Favor light-green, blue, gray and brown surfaces rather than red or bright yellow. He should be particularly careful also not to read in the twilight or in a semilighted room; nor, on the other hand, should he read in a light that is too intense. It is now possible to purchase electric light globes which refract the strong rays of light and thus make it possible to have a soft but adequate glow. When it is necessary to read for more than an hour at one sitting, the student should rest his eyes occasionally. A wise procedure is as follows: read for fifteen or twenty minutes, then rest the eyes by reviewing the material that one has read or by connecting it up with past experiences; then read for another fifteen or twenty minutes and again rest the eyes for a few minutes. By doing this alternately, it is possible to read for hours without tiring the eyes seriously.

The eyes of most students are normal and if the suggestions made above are followed carefully, there will be little difficulty with sight. Unfortunately, some eye defects are inherited and others may already have been developed before the student reaches college. There are at least four main eye difficulties which are found among college students. They are nearsightedness, farsightedness, astigmatism, and strabismus. Nearsightedness may be inherited, but usually it is developed as a result of the violation of some of the suggestions made above. Farsightedness is generally inherited and is more difficult to correct than nearsightedness. Astigmatism is an inability to see clearly. Every eye has some astigmatism. If the student becomes conscious of any blurring of vision he should consult an oculist. Strabismus is the name given to the condition of being cross-eyed. It is due to faulty adjustment of the eyes. If this difficulty is pronounced, the student should consult an eye specialist.

Fortunately, the delicate organisms which are involved in the sense of hearing are more carefully protected than the organs of sight. We know now that defects of the nose or throat may affect hearing. Children with pronounced adenoids and diseased tonsils may become almost deaf. It occasionally happens that children who have previously exhibited a tendency to deafness hear very well after tonsils and adenoids have been removed. For the sake of preserving the acuteness of hearing, every effort should be made to keep the passages of the nose and throat clear of obstructions. Sometimes difficulties develop in the ear canals themselves. If there is any tendency for the ear to run or for wax to collect too rapidly, the student should consult an ear specialist.

In the new health program of our schools, much emphasis is being placed upon the importance of general external bodily cleanliness. In fact, one of the health rules emphasized widely in our schools is to take a bath more than once a week. While it must be admitted that the present generation of adults has succeeded quite well in maintaining health by taking a bath once each week, yet the necessity nowadays of associating with human beings so intimately in offices, stores, factories, and elsewhere as well as the necessity of taking one's exercise under such artificial conditions makes it desirable to bathe more frequently. Attention should also be given to the cleanliness of the hair, of the finger-nails, and of the entire exterior of the body.

Recreation, Relaxation, and Rest

One of the most vexing problems of modern city dwellers is the problem of recreation and rest. As long as human beings spend their lives in the great out-of-doors, tilling the soil and harvesting the crops, physical exercise is abundantly taken care of. Because the human race engaged almost exclusively in agricultural and pastoral pursuits for so many centuries, the human organism became adapted to such a life. One must remember that modern city life is of comparatively recent origin and we cannot fairly expect the human organism to adjust itself so quickly to its new environment.

The need of physical exercise, no longer adequately supplied by one's normal pursuits, is evidenced by the widespread interest in athletics. Virtually every college provides for football, baseball, track, tennis, golf, and many indoor sports. In some parts of our country hockey, soccer, skating, and skiing are popular college sports also. While military drill has other functions, an important one is to provide physical exercise for students. There is at present a strong tendency in American schools towards sports and away from the more formal gymnastic exercises. Most of our sports, if engaged in intensively, call for a discipline fully as great as do gymnastic exercises; and the disciplinary value of sport has this advantage over required gymnastic exercises that participation in sport is voluntary and self-imposed.

Although physical exercise cannot be said to be as necessary to the body as food and air and water, yet no student should ignore the fact that physical exercise is an absolute necessity for his own successful living. His daily program should always include it and he should learn, early in his course, what kind of exercise will benefit him most. Boys usually have little difficulty in selecting sports which they like. There is such a wide variety and the means are so easily available that no boy need miss the opportunity to engage in several sports during his college career. Space does not permit a discussion of the advantages of each of the sports. In addition to convincing himself that physical exercise is necessary and in selecting one or more sports, each student should familiarize himself with a number of indoor exercises in which he may engage during the winter or during inclement weather. Walter Camp's "Daily Dozen" is a good example of the kind of exercise which city dwellers need. Fifteen minutes each day spent in intensive exercises of this kind, even if indoors, has a definite value as exercise.

The writer feels a real pleasure in seeing how women are slowly overcoming the general prejudice against their participation in the sports in which men have engaged for years. Although the musculature of women is somewhat different from that of men, women are coming to realize that there are few sports in which they cannot engage safely and profitably. Women need the out-of-door exercise just as much as men do. Soccer, hockey, baseball, tennis, golf, hiking, volley ball, and some forms of track work are now engaged in by women.

There is some difference of opinion as to the relationship of physical exercise to fatigue. Physiologists are inclined to agree that by exercising a different series of neurone complexes there will be a tendency to rest neurone complexes which have previously been in use. The chief difficulty in seeking rest through a change of occupation is that in the new occupation one may be unable to discontinue exercising the neurone complexes which are in need of rest. For instance, the student may have difficulty with a particular course, let us say with mathematics. Suppose he has worked on a group of problems for hours and feels thoroughly tired. He decides, quite properly, to spend an hour or two at tennis. If he can give his entire attention to tennis and forget in the meantime about his problems in mathematics, then at the same time that his exercise will help his body the neurone complexes involved in his work on the problems in mathematics will receive rest. If, on the contrary, he continues to think about his problems while he is playing tennis, he will neither rest his neurone complexes nor play his game successfully. The difficulty with too many people is that they take their troubles with them wherever they go. Some students find it impossible to eat a meal or to engage in any outside activity or even to sleep without worrying about the problems connected with their class work. The old slogan, "Work while you work, and play while you play" is still as valid as ever. "Live without worry, work without hurry, look forward without fear."

A well-chosen and well-regulated program of physical exercise is no more important than a careful program of rest. Every human being needs rest. The instinct of physical and mental activity is so strong in us human beings that we have not yet learned to control it so well as to make rest unnecessary. Before we realize it, this instinct has driven us to such activity that we feel tired.

As yet psychologists have not agreed on a satisfactory definition of fatigue. Book says:

> The body generates normally each day about 3,400 foot-pounds of energy through the digestion of food and through the extraction of oxygen from the air that we breathe. Of this total supply about 2,840 are used each day in maintaining the heat of the body. This leaves only 560 pounds for carrying on the vital, mental, and muscular processes which make up our daily life. It is evident, therefore, that our capacity for activity and work is limited, that each of us has a different and definitely limited human bank account in the form of available energy at our disposal, and that efficiency in our work depends at bottom on what we do with this energy or human power.[1]

According to this theory, every bit of work or enjoyment is a draft upon the limited supply of energy at our disposal. The most expensive drafts on this store of energy are made by the emotions. Anger and fear consume an unusually large amount. A human being can work only as long as his supply of energy lasts. If he exhausts entirely this fund of energy, he will find himself in a state of physical and nervous exhaustion from which full recovery is difficult and in some cases impossible.

Gates says:

> In the case of hard muscular work the decline in efficiency is rather steady and pronounced. . . . Mental work usually involves the activity of muscles as well as neurones of the central nervous system. . . . What we call "mental fatigue" is in part the result of muscular work and identical with muscular fatigue. . . . Feelings of fatigue and loss of interest are commonly accepted by workers as indicative, at least

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[1] W. F. Book, *Learning How to Study and Work Effectively*. By permission of Ginn and Company, publishers, 1926, p. 50.

> approximately, of a decreased state of efficiency. But that these symptoms are extremely misleading has been found repeatedly when the quantity and quality of the output have been measured during periods of continuous work. The loss of ability is not nearly as great as the loss of satisfaction in the work. Two or three hours of continuous work at maximum effort produces a temporary decrease in the product of not over 10 per cent, and in most functions less than that. . . . On the whole, continuous work in mental functions shows a small loss in output as compared to that found in continuous muscular work. . . . It is the repugnance, exasperation, excitement, or worry produced by mental work rather than the work itself which is harmful. If one can school himself to maintain interest and enjoyment in the task, the ill effects of long and hard mental work may be tremendously reduced. There are, of course, limits to the amount of mental work one may safely do because of the muscular fatigue and the deprivations of recreation, exercise, rest, and sleep which too persistent work may bring. Just how long a person may safely do mental work depends partly upon his general strength and stability, partly upon his susceptibility to excitement and worry, and partly upon his interest.[1]

Thorndike says in agreement:

> Too much work may be injurious positively, not only by direct mischief to the neurones doing the work itself, but also by producing in the system the states corresponding to over-excitement and worry. It may also be injurious negatively by depriving the [individual] of the joy, appetite, physical exercise, and sleep essential to health. . . . For over-excitement and worry from mental work, wise formation of habits is the preventive and cure. . . . The best practical rule seems to be to make sure of adequate exercise and sleep, to divide the balance of time reasonably between the duties and pleasures of life, and to work throughout the amount of time due for work, diminishing the natural checks so far as may be by securing proper physical conditions, interest and motive, and, for the rest, disregarding them. What amount of exercise and what amount of sleep are adequate varies with age and individuality. . . . The essence of mental hygiene is then—interest for efficiency; and for protection, sleep.[2]

Book suggests three important ways of conserving the organism, first, by taking short periods of relaxation or rest during the time devoted to study or other work; second, by recreation, laughter, and play; and, third, by developing an appropriate attitude toward one's task and toward one's methods of work.[3]

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[1] A. I. Gates, *Elementary Psychology*. Copyright 1928 by The Macmillan Company. Reprinted by permission. p. 582f.

[2] E. L. Thorndike, *Educational Psychology, Briefer Course*, p. 327f.

[3] W. F. Book, *How to Study and Work Effectively*, p. 58f.

A sufficient number of experiments have now been performed to prove that by relaxing or resting for short periods during the work day, one can actually increase his efficiency and work for a longer period of time. Taylor experimented with men loading pig-iron and found that when they rested for short periods during their work, they were able to load forty-seven tons a day instead of twelve and one-half without such rest periods. Knoeppel found that workmen who produced sixteen pieces an hour by working continuously increased their output to twenty-five pieces an hour when the work was punctuated by rest periods. In another case, he found that riveters who were given frequent rest periods succeeded in driving 1600 rivets a day compared with 600 a day when they worked continuously except for a period of rest during the noon-hour.[1]

Instead of working continuously for a period of two or three hours at any task, it appears to be better to work for fifteen or twenty minutes, then rest for five minutes, then work again for fifteen or twenty minutes, and rest for five minutes. This should be continued during the entire work period. Experimentation with this suggestion will demonstrate that one can do more work, and better work; and he will be able to work longer without feeling tired.

The most essential form of rest is sleep. With few exceptions human beings must spend a considerable portion of their lives in sleep. Primitive man went to sleep with the arrival of darkness and awoke with the arrival of dawn very much as animals do now. Since man has invented and developed many forms of artificial light, he has made it possible to continue certain activities during the entire twenty-four hours of the day. Modern civilization demands the continuous operation of many of these forms of activity. In order to keep them in operation, it is necessary for a large number of human beings to engage in work during the hours of the night as well as of the day. Many forms of recreational activity are available only during the early hours of the night, usually beginning at seven or eight o'clock and ending at any time from ten o'clock in the evening till long after midnight. These conditions greatly complicate our inherited program of sleeping during the hours of the night and of being awake during the hours of the day.

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[1] Book, *op. cit.*, p. 59f.

The amount of sleep which any person needs depends very largely upon the individual. The sensitivity of the neurones as well as the intensity of responses which are made by muscles and glands largely determine the degree of fatigue which will be felt by the whole organism. Headley tells us that one of America's best-known scholars who far outlived his generation and maintained his usefulness to the last, once told him that he had not slept for many years.[1] Book[2] reports that Jeremy Taylor carried on work with only three hours of sleep a day. Napoleon required only five hours of sleep. Thomas Edison is tireless in his work as an inventor but he finds it unnecessary to use more than three or four hours daily for sleep. Friends of Edison assert, however, that he takes frequent naps when he finds time to do so. Professor Moss of George Washington University, together with eight students, four men and four women, remained awake continuously for sixty hours. After sleeping from eight to ten hours the vitality of each individual seemed to be restored without any trace of permanent injury. The experiment revealed however, that after the first twenty hours of wakefulness the blood pressure dropped hourly, the capacity for mental activity, as revealed by auto parking and the Army Alpha tests, decreased very slowly, and the white corpuscles in the blood increased as the experiment proceeded. Professor Moss did not intend to demonstrate that we should live without sleep entirely, but he believes that most of us can get along with a much smaller amount of sleep than we think we can.[3]

If one has difficulty in sleeping, he should go to bed at a regular hour, lie quietly, reject all disturbing thoughts, and rest. He should realize that the relaxation of the organism is the valuable part of lying down. After all, the essential element in sleep is relaxation, which affords the organism the opportunity to rest and to restore itself. The chief difficulty with most college students is not sleeplessness, but a tendency to engage in regular college activities in a condition only half-awake due to a lack of the proper amount of rest and relaxation. Many students refuse to accept such advice as is given here and insist that they can well afford to get along with a small amount of sleep.

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[1] L. A. Headley, *How to Study in College,* p. 30.

[2] W. F. Book, *Learning How to Study and Work Effectively,* p. 82. See also Robert Kingman, "Shall We Sleep Life Away?" *Readers Digest,* 8:33-35 (May, 1929).

[3] *Literary Digest,* 86:25 (Sept. 19, 1925). See *idem,* 74:22 (July 15, 1922).

This may be true in individual cases, but in general students will need more than the average amount of sleep. A period of eight hours for sleep is a good rule, but each student may well test himself to determine whether he needs more or less. If with eight hours of sleep he finds that the last hour or two are spent in dreaming, he should reduce the number to six or seven hours. If, on the other hand, he finds that after having slept soundly eight hours he regularly feels tired after he has been up several hours, or if he has a sense of sleepiness during the waking hours of the day, he should extend the period of time devoted to sleep to nine or ten hours. Of course, one should be warned against taking it for granted that it is only a lack of sleep that causes a sluggish feeling during waking hours. Such a feeling may be caused by other conditions. It may result from defective eyesight, the state of the weather, activity following too soon after heavy meals, food which is not conducive to wakefulness, or even from laziness.

One should consider the quality of sleep—its soundness—as well as the quantity of it. We know that certain conditions influence the quality of sleep. People sleep more soundly on a dark night than on a moonlit night. They sleep more soundly during the first hour or two of the sleeping period than later. They usually sleep more soundly in a place where there are no distractions, and they sleep more soundly if they can retire with a sense of peace and contentment with themselves and the rest of the world.

The work of the day also influences one's sleep. If a student's work has been difficult, annoying, or exasperating, causing a serious challenge to his whole nervous system, we may be sure that unless he has very strong self-control, the activity of some of the neurone complexes will recur during his sleep. Another cause of restless sleep is the habit of eating heavy or indigestible foods such as mince-pie and ice cream before retiring. Dreams are an evidence of restlessness in sleep. What dreams are and why we have them are questions which physiologists and psychologists are attempting to answer. Little more need be said regarding dreams at this point, further than that if an individual is inclined to dream much during his hours of sleep, it is an indication that his sleep is not sound. He should try, first of all, to lessen his tendency to dream by reducing the number of his hours of sleep. If this is not effective, he should analyze his case by thinking over the causes of his restless sleep which have been discussed in the foregoing paragraphs.

The emotional life of the individual will determine to a considerable extent the success or failure of his active life. Vital statistics show that approximately three-fourths of all human beings die prematurely not because of the lack of the necessities of life, but because of disease, accident, and the results of worry and chagrin, sorrow, anger, and other violent emotional states. We have already referred to the function of the glands in connection with emotions. If the student will make a careful study of the nature of his own emotional complexes, especially the sensitiveness of his organism to the little worries of life, he will be in a position to improve the quality of his reactions and perhaps increase the length of his life.

ADJUSTING ONESELF TO EXTERNAL FACTORS

To attain success in one's college career and in later life, one must learn to adjust himself as far as possible to certain external factors which influence life. One of these is the weather. Book tells us that experiments show that the wind, the humidity, and the temperature of the air, as well as barometric pressure influence human efficiency. He asserts that in the Bank of England it was found that most of the mistakes in calculation were made on rainy and foggy days. In a manufacturing establishment in our own country, he found that the output was 10 per cent less on cloudy and rainy days than on bright days. College instructors have long since noted the effect of the weather on their students. A cold, bright day means alert, responsive students. A warm, sultry day means sleepy, unresponsive students. Dexter made a study of the influence of the weather on human conduct to determine whether teachers were justified in asserting that the weather affected their pupils. He compared the number of absences from schools, of cases of discipline in school, of arrests according to police records, of cases of assault and battery, of cases of drunkenness, of suicides, of absence from duty of policemen, of attendance at hospital clinics and number of deaths, with the weather conditions in New York City. He found that the weather affects human conduct noticeably in many ways. He says:

If we want to keep from fighting we must take care on a hot day, and if we want to keep sober we must look out on a cold one. But there is one consolation, if we want to commit suicide neither one seems to have anything to do with it—at least until we reach that deadly point of 90 degrees Fahrenheit as a mean for the day.[1]

Although when it comes to committing suicide temperature seems to have little influence, low barometric pressure seems particularly favorable to it, the record being 176 per cent of expectancy when the reading is below 29.60. Extremely low barometric pressure also shows an enormous increase in number of deaths, in absences from school, in absence from duty of policemen, and in visits to hospital clinics. High humidity is also disastrous, as are also virtual calms, and that other extreme condition of air, high velocity of wind. Unfortunately, human beings are unable to control the weather, but they can learn to control themselves.

There are other external factors requiring adjustment besides weather. Some educators urge that a student should form the habit of doing his work always in the same place. Kornhauser claims that a definite place to study is no less important than a definite time. He declares that we should have a particular table and a particular chair which we should always use for study in intellectual work. This place will come to mean study. We should sit down in that particular spot at a regular time. It automatically leads us to assume a readiness for work. Whipple similarly emphasizes the importance of having a particular place, a particular desk and a particular chair for study. Educators urge that the student should form the habit of doing a certain piece of work at a definite time. Book claims that "to form a definite time and place habit for work means that when a certain time of day rolls around, he (the worker) will be in this place ready to apply himself promptly and fully to his work." Book believes that such a habit makes the work easier and the results more efficient.[2]

Undoubtedly these suggestions are valuable for most students, especially for those who have not developed the ability to ignore distractions. Those who have formed habits of interest and concentration of effort can very probably go to work anywhere or at any time on any task which confronts them. But the beginning student should, without doubt, form regular time and place habits. Later in his college career when he has developed the desirable habits of interest and concentration, he should learn to do his tasks at different places and at different hours of the day.

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[1] E. G. Dexter, "The Influence of the Weather on Human Conduct," *The Scientific Monthly*, 23:322-330 (October, 1926).

[2] W. F. Book, *Learning How to Study and Work Effectively*, p. 288f.

Another external factor which every student should consider is the room in which he does his work. He should make sure that there is adequate light and that it is well placed. He should watch the temperature of his room as well as the freshness and humidity of the air. He should provide himself with a roomy table and a comfortable, straight-backed chair. Any distraction in the study room, including pictures and magazines, should be removed. He should learn to ignore all interruptions, such as talking, music, or noise in the same house or in the neighborhood.

A PHILOSOPHY OF GOOD HEALTH

Robert Browning says in "Rabbi Ben Ezra,"
. . . "All good things
Are ours, nor soul helps flesh more, now, than flesh helps soul!"

Fisher and Fisk tell us that if we are to be really healthy, our mental attitude must be healthy. The health of the body and the health of the mind react on each other. Discontent is often the consequence of wrong conditions in the body, and although melancholy, worry, peevishness, and fear generally appear as arising from external conditions, there may be physical causes of them existing within the body itself. Just as physical conditions affect our reactions to our environment thus revealing our outlook on life, so our mental attitudes affect the operation of our physical organism. Shame fills our cheeks with blood. Fear drives the blood away. Excitement quickens the heartbeat. Grief brings tears. Sighs cause disturbances of regular breathing. A great shock to the mind many cause fainting, worry interferes with digestion and sleep. A strong emotion may lead to a great increase in the sugar in the blood, sometimes enough to cause its appearance in the urine as though one had diabetes.[1]

It is no wonder that it has been said that "bitterness of soul banishes sweetness even in the body." It is no wonder that those who live to a happy old age tell us without exception, to make life as serene as possible. "Don't worry about what you can't help and then don't worry about what you can help," is good advice.

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[1] Fisher and Fisk, *How to Live,* p. 123f.

What we want, then, is a life full of activity, full of joy, and full of service. There must be care of body and of mind, good food, pure air and water, wholesome exercise, relaxation and sound sleep. We must banish worry and let hope reign supreme.

QUESTIONS

1. How do you account for the emphasis on good health in American education?
2. What is meant by the "gateway of the body"? How may it be guarded?
3. What are the qualities of pure air?
4. Name the important types of food which human beings should eat.
5. What are vitamins? What is their function?
6. Make some suggestions as to when one should eat and how one should eat.
7. What functions in the body are performed by water?
8. What suggestions for eliminating poisons and waste from the body should the student heed?
9. How may the exterior of the body be cared for?
10. What is the nature of recreation? Suggest some ways by which a student may recreate body, mind, and soul.
11. Show how good health is maintained by relaxation and rest. What should be the student's attitude toward fatigue?
12. To which external factors must the student learn to adjust himself? How may this be done?
13. How are one's philosophy of life and his health related?

EXERCISES

1. What evidence can you produce to show that your college is interested in your health?
2. Why is the care of the teeth important? What do you think of the idea that it is not in accord with God's will to remove portions of the body although they may interfere with good health?
3. Keep a record of everything that you eat for several days. Analyze your menu. Do you eat enough fruit? Vegetables? Do you drink enough water?

4. Why did the American people pass the Eighteenth Amendment to the Constitution? Do you suppose that there will be a crusade against the use of tobacco some time?
5. How do you account for the enormous increase in the use of tobacco in the last decade?
6. Defend or criticise the following statements:
   (a) You may eat anything provided it is done with moderation.
   (b) "Early to bed and early to rise,
   Makes a man healthy, wealthy and wise."
   (c) Every student should sleep at least eight hours every night.
   (d) Frequent short rest periods are better than few long rest periods.
   (e) One should study his lessons always in the same place.
   (f) One should submit to a thorough physical examination at least once each year.
7. State the theories of fatigue and of the conservation of energy. What evidence can you present to show that physically we become fatigued, but mentally we do not? Read Sel. Ref. 1 or 7.
8. Make a list of health rules that you feel you can follow during your college career.
9. What changes do you feel should be made in your present environment in order to increase the success of your work and life?
10. Consult the *Reader's Guide* for references on sleep. Read some of these references. Do you find agreement on the amount of sleep necessary for successful living?

SELECTED REFERENCES

1. Book, W. F. *Learning How to Study and Work Effectively.* Ginn and Company, 1926. Chapter III: "Conservation of the Energy Used in Study and Work." Chapter IV: "Sleep and Other Means of Restoring the Energy Used in Study and Work." Chapter XV: "Making Conditions Favorable For the Most Effective Work."
2. Clippinger, W. G. *Student Relationships.* Thomas Nelson and Sons, 1926. Chapter III: "Bodily Conditions," pp. 49-51. The equipment necessary for successful living.
3. Crawford, C. C. *Methods of Study.* Published by the Author, 1926. Chapter IV: "Hygiene." How to maintain physical vigor. How to protect oneself against the enemies of the body.
4. Fisher, I., and Fisk, E. L. *How to Live.* 17th ed., Funk and Wagnalls Company, 1923. An excellent guide to a wholesome physical life. The whole book is worth reading.

5. Headley, L. A. *How to Study in College.* Henry Holt and Company, 1926. Chapter I: "How to Keep Fit Physically." Chapter II: "How to Keep Fit Mentally."
6. Kitson, H. D. *How to Use Your Mind.* 3rd ed., J. B. Lippincott Company, 1926. Chapter XIII: "Mental Second Wind." Chapter XV: "Bodily Conditions for Effective Study."
7. Sandwick, R. L. *How to Study.* D. C. Heath and Company, 1915. Chapter XI. How one may conserve his energy in work and in study. A discussion of fatigue and the need for rest.

CHAPTER VII

BOOKS AND THEIR USE

Charles Kingsley once said, "Save a living man, nothing is so wonderful as a book." Mrs. Browning asserted that "no man can be called friendless who has God and the companionship of good books." Bangs said that "real books are the vehicles by which the still living minds of dead men are carried through the immortal years. Association with immortals is good, and it is through the open doorways of our libraries that they either come to us, or give us access to themselves." An unknown writer once said, "Books once were men." Proctor sang in a similar vein:

> "All round my room my silent servants wait,
> My friends in every season, bright and dim.
> Angels and Seraphim
> Come down and murmur to me, sweet and low,
> And spirits of the skies all come and go
> Early and late."

WHAT IS A BOOK, MECHANICALLY?

Mechanically, a book is made up of a number of sheets of paper carefully bound. On the cover and on the leaves inside, may be found printed information on a specific subject. Book makers have adopted a regular form and arrangement in the publication of printed material. We shall enumerate the principal parts of an ordinary book and briefly describe each.

1. The title-page always contains the title of the book, the author's name, and the publisher's name; sometimes the edition and the date and place of publication.

2. The copyright page reveals the date when the book was copyrighted, which is sometimes, but not always, contemporaneous with the date of publication. The copyright is the exclusive right given by law to the author of the book or to his publishers to publish and distribute it for a period of twenty-eight years with an option on a

renewal for twenty-eight more. Sometimes the names of the printer and the binder are also placed on this page.

3. The preface tells briefly the author's purpose in writing the book.

4. The table of contents lists the numbers and the titles of the chapters in order, and the pages on which each chapter begins. Occasionally a brief summary of each chapter is added.

5. Lists of illustrations, tables, figures, and graphs, state the number or the title of each and the page on which it may be found. Of course if the book does not contain illustrations, tables, and the like, this section of the book is omitted.

6. The body of the book usually consists of a series of chapters as indicated by the table of contents.

7. The appendix consists of supplementary material, notes, figures or tables which do not fit conveniently into the body of the book. Not all books contain this feature.

8. The index is common in textbooks but not in literary productions unless they have been edited for class use. The index is an alphabetical list of facts, names, places, subjects or events described, explained, or alluded to in the book, together with the page or pages on which they may be found.

CARE OF BOOKS

A word should be said at this point about the care of books. At the outset a new book should be opened with particular care. Ward says that the right way to open a new book is to

> . . . hold it with the back down on a table, letting the lids lie open so that they also touch the table. Open the leaves a short distance from the front and an equal distance from the end, gently pressing them down; open a few more leaves at the front and again at the end, and so on until you reach the middle of the book. Books should be handled gently. It strains the binding of a book to throw it or let it fall, lay it face down, strap it tightly, pick it up by one lid, lean on it when it is open or use it as a portfolio to carry notes in. For a bookmark, use a slip of paper. Do not use a match, a lead pencil or a handkerchief.
>
> Do not lay a book in a hot place, as on a radiator or near a stove. Heat dries and makes the glue more likely to crack, and warps the covers. It also causes leather bindings to rot and paper to become brittle.

Keep a book dry. Do not handle it with moist hands nor leave it in a damp place.

Keep it clean. Handle it with clean hands only. Never mark a borrowed book with pencil or pen nor make notes in it.

Handle the leaves at their outer edges only, to avoid tears. Do not crack the paper by folding the leaves or turning the corners down.

If a book borrowed from the public library gets damaged, do not try to mend it. Amateur mending is likely to make the trouble worse; for to mend a book properly usually requires some experience and skill, and sometimes the services of a professional bookbinder. Call the attention of the librarian to any damage when you take the book back, and let the library take care of it.

Always remember that the person who comes after you enjoys using a clean, fresh copy as much as you do. Moreover, library books are city property, and it is the duty of a citizen to protect them.[1]

THE LIBRARY AND ITS USE

The conception of those in charge of libraries as to how much the public should be encouraged to use them has changed greatly in the United States during the past thirty years. We are told that many years ago a Harvard librarian complacently reported that there was at that time only one book out of the library and he was on his way to Professor Agassiz to get it. In that day libraries were places where books and records were locked up to be kept safe from public use. Many of our largest libraries were either not opened at all to the public or were opened only for a few hours each week. But today, librarians everywhere are eager to increase the circulation of their books. The primary object of library system at the present time is to aid the reader in finding the material that he wants. Everything in a modern library is arranged to facilitate the distribution of information as well as the circulation of books, magazines, bulletins and so on.

Although library buildings differ widely in design, the general scheme for the arrangement of the facilities of the library is about the same in all. Every first-rate library has a stack room, a card catalog, a reading room with a section of shelves for reference books, one for indexes and guides, and a rack for current magazines and newspapers. Many libraries also have a room or a separate section of shelves for children's books, and a section for pictures, postcards, stereographs, and similar material. A great many libraries also contain offices for the employees of the library and special rooms where books, magazines, and other reading materials are received, cataloged, bound, repaired or distributed. The stack room or rooms contain the books of the library arranged on shelves.

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[1] G. O. Ward, *Practical Use of Books and Libraries,* p. 2f.

The order in which the books are arranged on their shelves is determined generally throughout the United States by the Dewey Decimal Classification System. By this system the whole sum of human knowledge is divided into ten large classes, each class having a fixed number, as follows:

000 General Works
100 Philosophy
200 Religion
300 Sociology
400 Philology
500 Natural Science
600 Useful Arts
700 Fine Arts
800 Literature
900 History, Travel, Biography

Each of the above classes is again subdivided into ten divisions and each division is further subdivided into ten sections. For instance, Class 300—Sociology—is subdivided as follows:

310 Statistics
320 Political Science
330 Political Economy
340 Law
350 Administration
360 Charities and correction
370 Education
380 Commerce, transportation
390 Customs, folklore

In a similar way Division 330—Political Economy—is subdivided as follows:

331 Labor
332 Banking, money
333 Land
334 Corporation
335 Socialism
336 Finance
337 Tariff
338 Production, trusts
339 Pauperism

At this point in the system a decimal point is introduced, and beyond this the subdivision may be repeated as often as necessary. Thus under 331—Labor—the subheads appear as follows:

331. Labor
331.1 Capital and labor
331.2 Wages
331.3 Child Labor
331.4 Labor of Women
331.5 Convict Labor

Since each subject has a definite number, all books on one subject must stand together on the shelves. Thus all books on the labor question are numbered 331 and will be found together on the shelves immediately following the books marked 330. The analysis of the classification number 331.3 is as follows: Class 3 (Sociology), Division 3 (Political Economy), Section 1 (Labor), Point 3 (Child Labor). Each book on Child Labor is thus marked 331.3, each integer having its own significance in the classification. In addition, each book is given an author label, which is a combination of the first letter of the author's surname and numbers indicating the place which this particular volume holds in a series of volumes using the same letter. This helps to keep all books on each subject in alphabetical and numerical sequence. Thus a book on Child Labor by Hosmer would be marked $\begin{matrix}331.3\\ \text{H 79}\end{matrix}$ and one by Howard would be $\begin{matrix}331.3\\ \text{H 83}\end{matrix}$. These two number units, the classification number 331.3, and the book number 83 plus the author's initial, form the "call number" of the book. It is written on the label on the shelf-back of each book, on the library's bookplate on the inside of the front cover, and one the upper left-hand corner of the catalog card. This call number with the name of the author, and the title of the book desired should always be written on the "call-slip."

The Card Catalog

If the library is small and the reader is familiar with the general arrangement of the books on the shelves, it is not difficult to locate a desired book. But since many libraries are large and since most readers are not thoroughly familiar with the system of classification, librarians have devised the card catalog to enable those seeking books to locate them in the library. Generally the card catalog, the reference books, indexes, and guides are kept in the reading room. These constitute the means by which the seeker after magazines or books may find them. Usually current magazines and newspapers are also available in the reading room.

The card catalog consists of a collection of small drawers labeled with letters and arranged in order from A to Z. In each of these drawers is a collection of cards 12.5 cm. by 7.5 cm. Each card in the catalog represents a book, a magazine or a part of a book or magazine which the library contains, or which is available in some affiliated library.

There are three main types of cards—author-cards, subject-cards and title-cards, each book being listed under all three heads. The purpose of an author-card is to help the reader find the book or magazine which he wants, through the name of the author of the publication, hence the author's name is placed first on the card. In arranging the author's name on the author-card, his last name is always given first.

Author-Card

371
K84 Kornhauser, Arthur William
How to study, some suggestions for college students, by Arthur W. Kornhauser. Chicago, Ill., The University of Chicago press (1926)
vii, 43 p. 17cm. (Half-title: Materials for the study of business)
"References for further reading": p. 43.

The purpose of the subject-card is to help the reader find the book or magazine which he wants through the subject-matter of the publication, hence the subject holds first place on the card.

Subject-Card

371 Study—Method of
K84 Kornhauser, Arthur William
How to study, some suggestions for college students, by Arthur W. Kornhauser. Chicago, Ill., The University of Chicago press (1926)
vii, 43 p. 17cm. (Half-title: Materials for study of business)
"References for further reading": p. 43.

The purpose of the title-card is to help the reader find a book or magazine by citing the title of the publication which he desires, hence the title holds first place on the card. In looking for a title-card it should be remembered that *the, a* and *an* and their equivalents in foreign languages, introducing the title of a written production, are not considered. For example, *The Story of Man* is listed under "S."

In looking for a book or an article in the card catalog, a student

TITLE-CARD

371 How to Study. (c1926)
K84 KORNHAUSER, ARTHUR WILLIAM
How to study, some suggestions for college students, by Arthur W. Kornhauser. Chicago, Ill., The University of Chicago press (1926)
vii, 43 p. 17cm. (Half-title: Materials for study of business)
"References for further reading": p. 43.

should proceed as follows. First, if he knows the name of the writer, he should look for that name among the author-cards. Second, if he does not know the name of the writer but knows the name of the book or article, he should look for the name of the book or article among the title-cards. Third, if he knows neither the name of the writer nor the name of the book or article for which he is searching, he should look for the subject among the subject-cards. Fourth, if he fails to find the desired information by looking through these three sets of cards, he should consult the loan-desk assistant or reference librarian. As soon as the card has been located in the catalog, the next thing is to fill out a call-slip which is usually found in a tray near or on top of the catalog cabinet. On this call-slip the reader should write the name of the author, a brief title of the book, and the call number which he will find in the upper left-hand corner of the card; then he should sign his name and give his address. This slip should then be presented at the circulation desk to the attendant who will procure the book from the stacks, keeping the call-slip at the desk as a record of its withdrawal.

INDEXES AND GUIDES TO PERIODICALS AND BOOKS

Just as the card catalog was devised to enable one to learn what material on a given subject is to be found in a particular library and to facilitate the locating of such material, so indexes and guides have been devised to give the reader information as to what material has been published on any given subject. The material listed in indexes and guides may or may not be in the local library. If the library is large and well-stocked most of the material so listed is likely to be obtainable there. Most of the indexes list articles in periodicals in addition to other kinds of printed matter. A large part of the magazine material published since the beginning of the nineteenth century has now been indexed. The following magazine indexes are usually available:

1. *Poole's Index to Periodical Literature* covers the period from 1802 to 1907. It lists material published in both English and American magazines during these years. The magazines considered are general in nature and the articles are listed by subjects only and not by author or title. An author's name appears only when the article is about him or about something which he has written.

2. *The Reader's Guide* covers the period from 1900 to the present time. It too deals only with general magazines. It represents a highly perfected library technique, for the magazine materials are listed by author, topic, and title and there are also many cross references. Every reference gives the name of the magazine in which the article occurs, the volume, page or pages on which the article may be found, as well as the month and the year of publication of each article listed. If the magazine is published more than once a month, the day of the month on which it is published is given as well. One of the desirable features of the *Reader's Guide* is the promptness with which indexed magazine material is made available. As rapidly as the material can be digested each month, the *Guide* is published in pamphlet form. These monthly numbers are cumulative.

3. *The Reader's Guide to Periodical Literature: Supplement* covers the period from 1907 to 1919. This supplement digests the material in the less familiar and more technical magazines.

4. *International Index to Periodical Literature* began in 1920, being the successor to the preceding *Reader's Guide: Supplement* and like it, digests only the less familiar and more technical magazines. It appears five times each year, the January number forming the annual cumulation.

5. *The Annual Magazine Index* covers the period from 1907 to date and indexes the less familiar English and American magazines which specialize in history, travel, and fine arts.

6. *The Engineering Index Annual* began in 1907 and covers American and foreign journals and publications of engineering societies.

7. *The Dramatic Index* began in 1909 and specializes in magazine material dealing with the drama.

8. *The Industrial Arts Index* began in 1913 and specializes in engi-

neering, business, and trade periodicals. It also includes some government publications and pamphlets.

9. *The Agricultural Index* began in 1916 and is devoted to agricultural periodicals as well as to government reports and bulletins dealing with agriculture.

10. *The New York Times Index* began in 1913. It is published quarterly and deals with newspaper articles. The material is arranged alphabetically by subjects, covering the news and happenings of the world, and giving the date of each event and a summary of its development. In addition to being an index to many metropolitan newspapers, this index is also useful in that it gives a digest of the history of many events of importance.

If a reader desires to find a book which is not listed in the local library card catalog, he may consult one of the following book indexes:

1. *The United States Catalog of Books* dates from January 1, 1912, with supplements to date. This catalog lists all books obtainable with entries under author, title, and subject.

2. *The Publisher's Weekly* appears weekly and contains a list of new publications with monthly cumulations.

3. *The English Catalog* from 1801 to 1920 with annual supplements, lists books published in America by author, title, and subject.

4. *The Book Review Digest* began in 1905 and lists most of the books which have been published since that time as well as book reviews which have been published about the books listed.

When a student has found the material he desires listed in an index, he must make sure that the desired book or magazine is to be had in the local library. Let us suppose that a student desires some information on "Personality." By consulting the *Reader's Guide* he will find listed under "Personality" an article published in *The American Magazine* for April, 1924, volume 97, page 9f. He will next consult the card catalog to determine whether *The American Magazine* for 1924 is available. If the library possesses *The American Magazine* for 1924, he will need to find out whether the magazine is to be found on open shelves in the reading room, or on closed stacks to which he will not have access. If the magazine is on closed stacks, the student should fill out a call-slip being sure to give the volume as well as the name of the magazine and present it at the loan-desk where an attendant will receive it and bring him the listed volume. If the magazine is on open shelves in the reading room, he should go to the magazine section and locate the set of bound volumes of *The American Magazine* by finding, on the backs of the volumes, the number which corresponds to the number on the card in the catalog. Finally, he should look for the desired volume and then for the proper month and page. Current magazines which have not yet been bound are usually to be found in a special current magazine section or they may be secured from the receiving or binding room by calling at the loan desk.

Books for General Reference

General reference books may be divided into three classes. The first class includes encyclopedias; the second, dictionaries; and the third, yearbooks or almanacs. The best encyclopedias, available in most libraries, are the following:

1. *The Encyclopedia Britannica* is British in its point of view but its scope is consistently international. Each volume is made up of a series of articles arranged in alphabetical order.
2. *The New International Encyclopedia* is American in its point of view. It contains a variety of articles arranged in alphabetical order and hence it does not have a general index. The *New International* is kept up-to-date by the annual publication of the *New International Yearbook.*
3. *The Encyclopedia Americana* is similar to the *New International* but it contains much material which is not found in the latter, and vice versa, it lacks much material which is found there.
4. *Nelson's Encyclopedia* is a new venture in the field of encyclopedias. It is in looseleaf form and the publishers attempt to keep the encyclopedia up-to-date by replacing or adding new sheets whenever valuable new data appears on any subject.

Among dictionaries the following are in general use:

1. The *New International Dictionary* is commonly spoken of as *Webster's*. It contains an extensive list of words, besides abbreviations, foreign phrases, proverbs, noted names of fiction, proper names, and a geographical as well as a biographical appendix.
2. The *New Standard Dictionary* limits itself to live words and emphasizes current information. It uses reformed spelling.
3. The *New English Dictionary on Historical Principles* is also known as the *Oxford Dictionary* or as *Murray's Dictionary*. This dic-

tionary is encyclopedic in nature. In it the reader may find the history of every word used in the English language since 1150.

4. The *Century Dictionary* is second only to the *Oxford Dictionary* in size. It consists of twelve large volumes, ten of which constitute the dictionary proper. The eleventh volume is a dictionary of names and the twelfth volume is an atlas.

If the student desires only a general working knowledge of a word, he will find the *New International* or the *New Standard* sufficient. If, however, he desires a full treatment of the history and the use of a word, he should consult either the *New English* or the *Century*, preferably the latter. Publishers have made available for college students several dictionaries of so compact a size that they are not much more bulky than the average textbook. *The Concise Oxford Dictionary*, Webster's *Collegiate Dictionary* and the *Desk Standard Dictionary* are three examples of this type.

Among yearbooks and almanacs the following deserve consideration:

1. *The New International Yearbook* is really a supplement to an encyclopedia, as was suggested above. It is valuable chiefly because its material is up-to-date.

2. The *New Hazell Annual Almanac* (1917 to date) contains lists and tables of material relating primarily to English government, science, and art.

3. *The World Almanac and Encyclopedia* is limited largely to material dealing with American affairs. The index to the *World Almanac* is particularly good.

Students who wish further information on the subject of reference books may consult Mudge's *New Guide to Reference Books* recently published.

BOOKS FOR SPECIAL REFERENCE

In addition to the foregoing reference books of a general nature there is a large number of reference books in special fields. Space does not permit us to discuss all of them. If the following list does not meet the student's needs he should consult the reference librarian.

1. In architecture there is the *Dictionary of Architecture and Buildings*. (1901.)

2. In biography the most widely-used sources of information about living men and women are *Who's Who*, published annually in London

since 1849 and limited to eminent men and women in the British Empire; and *Who's Who in America,* limited to eminent men and women in the United States. For general use Lippincott's *Universal Pronouncing Dictionary of Biography and Mythology* (1915) is probably the best source for biography. *The Dictionary of National Biography* (1885-1901) contains excellent biographies of Englishmen; Appleton's *Cyclopaedia of American Biography* (1888-1900) contains a similar collection of biographies of Americans.

3. In education there are Monroe's *Cyclopedia of Education* (1911-1913), Patterson's *American Educational Directory,* and Bulletins of the United States Bureau of Education.

4. In geography, there are two kinds of reference books, atlases and gazetteers. The atlas is a collection of maps, the gazetteer is a collection of descriptions of localities, everything being arranged alphabetically. Lippincott's *New Gazetteer* (1922) is the best of its kind. Among the better atlases we may mention Rand, McNally and Company's *Commercial Atlas of America* (1926) and Hammond's *New World Atlas* (1920). For atlases on special subjects consult the reference librarian.

5. In government there are *The Statesman's Year-Book,* and McLaughlin and Hart's *Cyclopedia of American Government* (1914).

6. In history, reference books include Larned's *History for Ready Reference* (1922-1924), Channing, Hart and Turner's *Guide to the Study and Reading of American History* (1912), and Haydn's *Dictionary of Dates* (1910).

7. In literature Fletcher's A. L. A. *Index to General Literature,* Brewer's *Dictionary of Phrase and Fable,* Hoyt's *New Cyclopedia of Practical Quotations* (1922), and Bartlett's *Familiar Quotations* (1914) are excellent.

8. In music there is Grove's *Dictionary of Music and Musicians* (1904-1908).

9. In painting there is Champlin's *Cyclopedia of Painters and Paintings* (1892).

10. In philosophy there is Baldwin's *Dictionary of Philosophy and Psychology* (1911).

11. In religion there is Hasting's *Encyclopedia of Religion and Ethics* (1911-1921).

HOW TO FIND WHAT YOU WANT

Most college students have had some training in the use of books and libraries during their high school years. For those students who have had such training what follows will be merely a review, but those who have not had it should read the following directions with care. Let us suppose that the student is to make a report on "Labor Unions." How will he proceed to collect the material for his report?

1. His first move will be to consult the library card catalog from which to make a list of possible books and other material on "Labor Unions." If he follows the directions given in the foregoing pages for the use of the card catalog, he will have no difficulty in making such a list.

2. If the library is a large one he must remember that there may be other material on labor unions than that listed in the card catalog. In order to find out what other material there may be he will turn, for his second step, to the general indexes, reference books, and guides. For magazine articles, he will find the *Reader's Guide* undoubtedly best. If he looks under the caption "Labor Unions" he will find references to current magazines. For the names of books on his subject he will consult either *The United States Catalog of Books* or *The Book Review Digest*. He will copy accurately the name of each reference, the volume, the page or pages, and the date of publication of the magazine or book if it is given.

3. For his third step he will find out whether the books, magazines, newspapers or other works of reference which he finds listed in the general indexes and guides are available in the local library. He may do this by consulting the card catalog or the location chart in the reference room, and if he is unsuccessful there, by inquiring of the reference or desk librarian.

4. Sometimes desirable material is not recorded in the indexes, guides or other available reference works. In order to make certain that his list contains everything that the library offers on "Labor Unions" he will, for his fourth step, turn to the reference librarian. She may be able to suggest sources of material within one or more of the following: state and municipal laws, regulations, and reports; federal reports, both annual and periodical; reports of institutions, organizations, private agencies, and foundations; surveys, and special bulletins.

5. He should remember also that a list of references is frequently given at the end of a chapter or elsewhere in a book. He will for his fifth step, therefore, look for such lists through the books that he has found on his subject.

6. Finally, for his sixth step, he will examine the table of contents and the index in all books dealing with the subject of "Labor Unions."

How to Make a Report

The making of a good report on any unfamiliar subject involves a well-established technique. We have already suggested how the student may find the library material that he needs in preparation for his report. We shall show here how a good report is to be made.

Such a report consists of (1) a title page, (2) an outline of the report or a table of contents, (3) the report proper, including (*a*) an introduction, (*b*) the body of the report, (*c*) a conclusion in which the materials of the report are summarized, and (4) a bibliography.

1. The title-page consists of the title of the report, the college course in which the report is made, the name of the instructor, the date on which the report is completed, and the name of the student. If the report is of considerable length it should not be folded, but should be kept flat, the pages being fastened together with paper clips. Directions concerning the location and order of the items on the title-page will probably be given by the instructor in the course. If no directions are given, the following items should be included:

Title of Paper...............Labor Unions
Name and Number of Course. .Political Science 142
Instructor's name............Dr. Henry Clay, Instructor
Date ....October 15, 1928
Name ....Harry E. Hoover

2. The outline or table of contents of the report consists of the divisions of the report, indicating its general nature, the sequence of its parts, and giving the number of the page on which each part begins.

3. The report proper consists of three essential divisions, namely, (*a*) an introduction in which there should be a statement of the purpose of the report, the nature of the sources examined, and the general trend of the report; (*b*) the main body of the report which should consist of a carefully arranged series of ideas developed and presented in

such a way that the reader can follow and clearly understand them; (*c*) a conclusion which should summarize the main facts of the report and make clear in a nutshell what the writer has elaborated more fully in the main body.

Under the subhead (*b*) we may say something further about the structure and arrangement of the material in the body of the report. Each paragraph must constitute a unit, forming a link between what precedes and what follows. The ideas presented in a report must show logical sequence. Each statement must aid in the understanding of each succeeding one. The writer of such a report must always remember that since he has examined his ideas from many angles he will be inclined to attach to his statements a much greater richness of association and meaning than they will possess in the mind of the reader. He must therefore be careful to omit no detail that is essential for clearness. He must make certain that his presentation of material is convincing. Reports often fail in this regard. They give in monotonous detail everything, important and unimportant, which the writer has found on the subject on which he is writing. A good report represents a fine balance between first, the danger of bringing in ideas which are not pertinent and, second, the danger of being so brief that the steps are not clear.

One who prepares a report is expected to know his data thoroughly. He must be truthful and accurate. He must also be precise in his statements. This means that he must write exactly what he wants to say. The following sentence from a report lacks accuracy and precision:

> Definite interpretation of such tendencies as have become apparent has been undertaken, and the conclusions reached at all points are in accordance with the actual accomplishments or pronounced attitudes which successful state vocational programs have tried out and are definitely committed to.

What this writer meant to say was:

> The writer has reached conclusions which are in harmony with the results of successful state vocational programs.

Students should remember that precision in expression is the result of precision in thinking. Both thinking and expression may become more precise by (1) a careful and exact analysis of what one wants to say; (2) a careful choice of words; (3) exact usage of technical terms; and (4) a wise use of restrictive words and phrases.

The student who writes a report must give due credit to sources from which he obtains material. Quotations must be given verbatim, and they may either be enclosed in quotation marks if the quotation forms a part of the running discussion; or, if the quotation is a separate unit, such as a paragraph, it may be set off from the text by the use of smaller type or by different line-spacing (as is done in this volume), in which case quotation marks need not be used. The source of material should be given at the bottom of the page in the form of a footnote.

4. The bibliography consists of the sources consulted in preparing the report, and should not include any references which the student has not consulted. References should be arranged by authors in alphabetical order. If the source is a book, the following facts should be given: author, title of book, the publisher and the year of publication, and the page or pages. Thus:

Lewis M. Terman, *The Hygiene of the School Child.* Houghton Mifflin Company, 1914, pp. 345-348.

If the source is a periodical the following facts should be given: author or authors, title of article, name of periodical, number of volume, page or pages, month and year of publication. Thus:

Lucy L. W. Wilson, "The Dalton Plan: Why and How," *The Journal of the National Education Association,* XIV: 181-183 (June, 1925).

If the source is a bulletin or a yearbook or some other book, periodical or publication composed of a number of separate articles by various authors, the reference should be given as follows:

Samuel P. Capen, "Facilities for Foreign Students in American Colleges and Universities," *Bulletin of the U. S. Bureau of Education,* 1920, No. 39.

B. T. Baldwin, "A Measuring Scale for Physical Growth and Physiological Age," *Fifteenth Yearbook of the National Society for the Study of Education,* Public School Publishing Company, 1916, Part I, pp. 11-22.

If the source is an annual report, or a school survey, or a course of study, or some other publication in which the name of the writer is not indicated, the reference should be given as follows:

Annual Report, 1918-1919, Alton Public Schools, Alton, Illinois, Board of Education, 1919, page 119.

A word should also be said about footnotes. We have said that due credit should always be given to sources for materials used in the body of a report. While indirect quotations need not be set off from the text credit should nevertheless be given to their sources. The names of books and authors quoted from should be given in footnotes, as is done in this book. If the report is written in longhand a line should be drawn between the body of the report and the footnotes. As a rule figures are best to use in indicating footnotes, beginning with number 1, and starting a new series on each page. Another acceptable way is to number consecutively the footnotes in each chapter. It is important in either case to give the footnote at the bottom of the page on which the quotation, direct or indirect, is made. Asterisks, daggers, and other similar marks, should be used only when explanatory material is likely to confuse the reader. If two or more references are made to the same publication on the same page, it is not necessary to repeat the complete formula. Instead, one may use the term *Ibid.*, and give the page or pages. If reference is made to a source which has been used already on some other page, it is not necessary to repeat the reference. One may use instead the term *Loc. cit.*, or *Op. cit.*, and give the page or pages. It is well to give the name of the author of the source also. Thus, if one were to quote directly from Terman's *The Hygiene of the School Child,*[1] the footnote should appear as follows:

[1] Lewis M. Terman, *The Hygiene of the School Child.* Houghton Mifflin Company, 1914, pp. 345-348.

If later on the same page, he should use a second direct quotation from the same book, instead of repeating the reference in its entirety, he should put it thus:[2]

[2] Terman, *ibid.,* p. 349.

"Ibid" means "the same," implying that the reference is made to the same author and volume as the one immediately preceding. If on any succeeding page one were then to use another direct quotation from the same source, the footnote should appear as follows:[3]

[3] Terman, *op. cit.,* p. 352.

This will indicate to the reader that this book has been quoted previously.

WHAT TO READ

Somebody has said, "The half of knowledge is to know where to find knowledge." The search for information and inspiration in books is virtually universal among civilized peoples. One of the questions frequently asked by students is, What shall I read? Another is, What are the best books? A third question is becoming increasingly common, Which magazines shall I read? We shall devote the rest of this chapter to an attempt to answer these questions.

A hundred years ago it was not hard to decide what to read, for there were very few books to be had. But today thousands of books are published annually and altogether there are millions of books in existence. To the making of books there seems to be no end. "No man can hope to read even one-thousandth of one per cent of the books which exist." Not only are there many books on all phases of human experience, there are many books on every unit of human experience. One is amazed at the amount which may be published about a very small unit of knowledge. Bennett tells of a German scholar whose last words were:

> All my life has been given to the study of the use of the dative and ablative in Horace's *Odes*. I tried to cover too much territory. Alas! why did I not confine myself to the dative alone![1]

Any student who has ever given this problem serious thought realizes that to attempt to read exhaustively of the whole field of human knowledge is a futile undertaking. The need is rather for discriminating selection. Bennett says further:

> Whether at college or outside it the only true and enduring education is self-education. It must have two essential qualities—broad and well-rounded understanding and zest. Out of the chaos of books, the man who seeks to educate himself must find books which can give him one or both of these things. For no knowledge is valuable unless it is vigorous and dynamic and zestful. And no zest for life or knowledge or self-perfection can endure unless it is associated with broad understanding of the individual's real place in the world—of the planet on which he lives, of the past which produced him, of the present of which he is part, of the future which he will help to shape and of the beauties and splendors which make life worth living.[2]

That certain of the present-day makers of books agree with this viewpoint is apparent from the number of accounts of man's development and achievements written in a style that makes zestful reading and that contributes to a "broad and well-rounded understanding." Their attempt is to give a stimulating and comprehensive view of large segments of human knowledge. The following "Outlines" are now available: H. G. Wells' *Outline of History;* J. Arthur Thomson's *The Outline*

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[1] J. L. Bennett, *What Books Can Do For You*, p. 14.

[2] *Ibid.*, p. 19.

of Science; Faure's *History of Art,* William Orpen's *Outline of Art;* and John Drinkwater's *An Outline of Literature.*

In addition to these "Outlines," the student will find much interesting general information in the following books: *The Origin and Evolution of Life,* by H. F. Osborn; *What is Man?* by J. Arthur Thomson; *A Short History of Science,* by Sedgwick and Tyler; *A Book of Discoveries,* by M. B. Synge; *A Modern Symposium,* by G. L. Dickinson; *The Faith of a Free Man,* by Bertrand Russell; *Psycho-Analysis—Its Theories and Applications,* by A. A. Brill; *Society and Its Problems,* by G. S. Dow; *Democracy in Education,* by J. K. Hart; *Democracy and Education,* by John Dewey.

On the basis of their interest in reading, college students may be divided into two general classes: first, those whose interest is limited to their reading of the daily newspaper and an occasional magazine; and second, those who have already developed a definite interest in some particular field of reading. This latter interest may be in mere fiction, or in the widely varied subject-matter of several magazines, or in books of art, music, literature, or science.

Students of the former class whose interest is limited to the daily paper and an occasional magazine, should read Chapter II in J. L. Bennett's *What Books Can Do For You.* Such students will find there some helpful advice on how to broaden their reading. Students of the latter class will welcome the new opportunity, offered them at college, to intensify and to extend their interests in reading. Bennett says that history tells what man has done, science tells what man has learned, art tells what man has made, literature tells what man has felt and created and expressed in words, philosophy tells what man has thought. He devotes a chapter to each of these fields of human experience, and then suggests some excellent programs of reading for each of the following subjects: discovery, exploration and adventure; history; biography; science; philosophy, religion and mysticism; sociology and the social sciences; current problems and affairs; prose fiction; drama and poetry; essays and belles-lettres; art.[1] One of the best sources of suggestions for reading in the various fields of the fine arts is *Enjoying the Arts, A Group of Essays on Appreciation.*[2] At the end of each essay there is an excellent reading list.

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[1] J. L. Bennett, *op. cit.,* p. 174ff.

[2] Published by the Scholastic Publishing Company, Pittsburgh.

Sometimes a student is in doubt about the quality of certain books which he is fond of reading. He may settle such doubts by consulting one of the following: *The Bookman's Manual*, by Bessie Graham, *The Best Books*, by W. S. Sonnenschein, or *The American Library Association Catalog*.

Students frequently want to know too, which magazines may be considered sources of reliable information. Hutchins, Johnson and Williams[1] recommend the following list of magazines:

General magazines published in America: *The Atlantic Monthly* (M)[2]; *The Century Illustrated Monthly Magazine* (M), *The National Geographic Magazine* (M), *Country Life in America* (M), *Harper's Magazine* (M), *The Living Age* (W)[2], *Scientific American* (M), *Scribner's Magazine* (M), *The Survey* (W).

General magazines published in England: *The Contemporary Review* (M), *The Fortnightly Review* (M), *The Nineteenth Century* (M).

Magazines devoted to current events, published in America: *Current History Magazine* (M), *Current Opinion* (M), *The Literary Digest* (W), *The Nation* (W), *The New Republic* (W), *The North American Review* (M), *The Outlook* (W), *The American Review of Reviews* (M), *The World's Work* (M).

Magazines devoted to current events, published in England: *The Nation and the Athenaeum* (W), *Saturday Review* (W), *The Spectator* (W).

Literary periodicals: *The Bookman* (M), *Literary Review* (W).

CONCLUSION

It has been our purpose in this chapter to show what books are available in well-equipped libraries, how they may be procured from libraries, and how they are to be used. We explained the card catalog, the various indexes, guides, and reference books. We showed how we may find the reading matter we want in a library and how to make a report. We have also made suggestions as to what one should read.

Lest the student leave this chapter with the feeling that he has been led far afield in the mere mechanics of books, let us remind ourselves once more that although the mechanical aspect of books is of great importance, the spirit of a book is of even greater.

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[1] *Guide to the Use of Libraries*. H. W. Wilson Company, 1922, p. 69f.

[2] M indicates a monthly publication; W a weekly publication.

For books are more than books, they are life,
The very heart and core of ages past,
The reason why men lived and worked and died,
The essence and quintessence of their lives.
(Amy Lowell)

QUESTIONS

1. What is meant by the statement "Books once were men"?
2. Name the mechanical parts which constitute a book. Take one of your textbooks and see if you can find all of these parts.
3. Make a list of suggestions on the care of books.
4. What changes have taken place in the last thirty years in the use made of libraries?
5. Explain the Dewey Decimal Classification System.
6. What is the card catalog? What does it contain? Name the three types of cards in common use in card catalogs and explain each.
7. Explain the call-slip. What facts must it contain?
8. Give the purpose of each of the following:
   (a) *The Reader's Guide.*
   (b) *The International Index to Periodical Literature.*
   (c) *The United States Catalog of Books.*
   (d) *The Book Review Digest.*
9. Name the three classes of general reference books and give two examples of each.
10. How should a student proceed in trying to locate magazine material for a report? How should he proceed in trying to locate material in books?
11. Name the parts of a report. How should a written report be endorsed?
12. What rules should be observed in making a bibliography? In making footnotes?
13. By what criteria would Bennett have us determine the quality of reading materials?
14. What is the purpose of the so-called "Outlines"? How may a student determine whether or not a particular book is worth reading? How may he determine the quality of a magazine?

EXERCISES

1. Ask your instructor to arrange for a trip to your college library. The librarian will explain the organization of the library. Note particularly the location of the card catalog, of the magazine stacks, of reference

materials, and of the loan desk. Ask the librarian to show you some old books.

2. Go to the library, look up in the card catalog one of the following references:
    - (a) Adams, John, *A Defense of the Constitution.*
    - (b) Burke, Edmund, *Speech on Conciliation with America.*
    - (c) Carlyle, Thomas, *On Heroes, Hero Worship and the Heroic in History.*
    - (d) Franklin, Benjamin, *Autobiography.*
    - (e) Macaulay, Thomas Babington, *History of England from the Accession of James II.*
    - (f) Roosevelt, Theodore, *The Rough Riders.*
    - (g) Stevenson, Robert Louis, *Treasure Island.*
    - (h) Thackeray, William Makepeace, *Henry Esmond.*

    In each case fill out a call-slip, take it to the loan desk, secure the book, write a description of the book giving the year of copyright, the name of the publisher, and the place of publication. Take your description to your instructor.

3. The following exercises will afford some training in using the card catalog efficiently.
    - (a) Give author, title and call number of a book criticizing "The Ring and the Book" by Robert Browning.
    - (b) What is the latest book in the library on Mexican Foreign Relations? Give author, title and call number.
    - (c) Give the title and call number of a book by George Eliot.
    - (d) Give dates of the different editions of Macaulay's *History of England* which may be found in the card catalog.
    - (e) Give author and title of a bibliography on Coöperation.
    - (f) Give author and call number of a biography of Thomas Bailey Aldrich.
    - (g) Give author, title and call number of a history of New Mexico.
    - (h) Give author and call number of *The Fair Penitent.*
    - (i) Look up in the card catalog any subject-card. How does it differ from an author-card or a title-card?

4. Make a list of all available material on one of the following topics, telling how and where you found each item.
    - (a) Charles Lindbergh
    - (b) Our National Highways
    - (c) The Platoon School
    - (d) Herbert Hoover

(e) The Solid South
(f) Football
(g) The Eighteenth Amendment
(h) The League of Nations
(i) Mussolini
(j) Sleep

5. What do reviewers say of the following books? Who published each, and when? How and where did you find your information?
    (a) *Evolution—The Master Key,* by C. W. Saleeby.
    (b) *What Is Science?* by N. R. Campbell.
    (c) *The Outline of History,* by H. G. Wells.
    (d) *The Faith of a Free Man,* by Bertrand Russell.
    (e) *The Oregon Trail,* by Francis Parkman.
    (f) *Creative Chemistry,* by Edwin E. Slosson.
    (g) *Psychology From the Standpoint of a Behavorist,* by J. B. Watson.
    (h) *Essays in Taxation,* by E. R. A. Seligman.
    (i) *One of Ours,* by Willa Cather.
    (j) *Chats on Old Furniture,* by A. Haden.
    (k) *An Outline of Literature,* by John Drinkwater.

6. Get the information called for in each of the following and tell where you found it.
    (a) To which church does Calvin Coolidge belong?
    (b) What is the family history of J. P. Morgan?
    (c) Who is the superintendent or commissioner of public education in your state?
    (d) What is the meaning of the term "project" in an educational sense?
    (e) What are the history and meaning of the *Monroe Doctrine*?
    (f) When did Wagner write *Lohengrin*?
    (g) What was the *Mason and Dixon* line?
    (h) Who is the author and what is the first stanza of the poem beginning "Behind him lay the gray Azores"?
    (i) What did Rosa Bonheur paint?
    (j) Where is the island of St. Helena?

7. Find the definitions of the following words in at least three of the dictionaries suggested in this chapter:
    (a) cryptic
    (b) lurid
    (c) impinge
    (d) inert
    (e) taxidermy
    (f) current
    (g) cosmic
    (h) further
    (i) flunk
    (j) except
    (k) officious
    (l) scholar

SELECTED REFERENCES

1. Book, W. F. *Learning How to Study and Work Effectively*. Ginn and Company, 1926. Chapter XVIII: "How to Make an Investigation or Critical Study of a Particular Topic or Subject."
2. Bennett, J. L. *What Books Can Do For You*. Doubleday, Doran and Company, 1923. A sketch map of the frontiers of knowledge, with lists of selected books.
3. Crawford, C. C. *Methods of Study*. Published by the Author, 1926. Chapter X: Nature and purpose of a college library. Getting what you want in a library.
4. Fay, L. E., and Eaton, A. T. *Instruction in the Use of Books and Libraries*. F. W. Faxon Company, 1928. A description of a standard library. Also a description of the various classes of books available.
5. Headley, L. A. *How to Study in College*. Henry Holt and Company, 1926. Chapter XI: "How to Use the Library." A digest of reference material and suggestions on the use of the library.
6. Lyman, R. L. *The Mind at Work*. Scott, Foresman and Company, 1924, pp. 63-69. How to use the library.
7. Hutchins, M., Johnson, A. S., and Williams, M. S. *Guide to the Use of Libraries*. H. W. Wilson Company, 1922. A manual for college and university students
8. Ward, G. O. *Practical Use of Books and Libraries*. F. W. Faxon Company, 1928. Another excellent guide to the use of libraries.

CHAPTER VIII

THE IMPROVEMENT OF READING ABILITY

Direct experience with life is highly desirable, but we must agree with John Dewey that "the scope of personal, vitally direct experience is very limited. If it were not for the intervention of agencies for representing absent and distant affairs, our experience would remain almost on the level of the brutes."[1] We are compelled to resort then to an indirect method of experiencing the life of the world as it is revealed in written language, telling of history, geography, science, literature, music, art, sculpture, and architecture. Of the media for indirect experience reading is undoubtedly the most important.

In the preceding chapter we indicated where and how we may find what we want to know about books. In this chapter we shall devote our attention to the ways by which we may improve our ability to read.

The Nature of the Reading Process

Through reading we experience life. As one scans the books on reading one is struck by the frequency with which the words "reading," "experience," and "life," occur together. A few quotations will suffice to show this trend.

"Through *reading*,[2] the child is able to enrich his *experience*. This power will emancipate him from the immediate, in time and place, and bring him into contact with the thought and *life* of other ages and climes."[3]

"All who *read* may have a wider world, impossible for direct participation. . . . *Reading* changes the plane of *experience*. . . . A *reader* may *experience* the remote in distance or time and thereby increase the amount of his *life*."[4]

"The material of *literature* is *experience*; or in other words, *literature* is the expression of *life*."[5]

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[1] John Dewey, *Democracy and Education*, p. 272.

[2] The italics in this series of quotations are mine. O. H. W.

[3] G. H. Betts, *Classroom Method and Management*, p. 134.

[4] S. E. Davis, *The Technique of Teaching*, pp. 81-82.

[5] G. E. Woodberry, *The Appreciation of Literature*, p. 1.

"The purpose of *reading* is reconstruction of *experience*. It is a mode of *living*."[1]

"*Literature* is a mirror of *life*; . . . one of its chief values is to enable us to understand and to appreciate *life*. In fact, *literature* is *life*."[2]

Matthew Arnold calls *literature* a "criticism of *life*," and Bagley and Keith, after stating that "*literature* does not constitute an exception to our general principle that the materials of education are, in a final analysis, products and records of human *experience*," declare that "*literature* is an interpretation of *life*."[3]

Books are storehouses of symbols. Many people think of books as storehouses of facts. But if we accept the statements of the writers quoted above we must say rather that books are the storehouses of symbols which men and women have used to record their experiences. The symbols themselves are not the essence of life; they are the media only, through which the experience of one person who writes, may stimulate a similar reaction in another who reads. Books are the open doors through which we may pass to a larger view of life. Successful reading implies three things, first, a human being who has experienced something which he considers worthy of sharing; second, a set of accepted symbols by which he has given expression to his experience in the form of words; and third, a second human being who, sensitive to the meaning of the symbols used, sympathetically enters into the writer's experience. The second element, the symbols, is the medium through which all printed matter conveys its message from the writer to the reader.

If we are to get anything out of our reading, then, we must bring something to it. Kerfoot has this in mind when he says that "reading is a copartnership. What we receive from it is in the nature of dividends on a joint investment."[4] An example of this is the experience of scholars with the Rosetta stone. For centuries they had attempted to decipher the language of the ancient Egyptians. But their attempts were futile until in 1799 a tablet of stone was discovered by an officer of engineers in Napoleon's army near Rosetta, a town in Egypt on the delta of the Nile. This stone bears one inscription written both in Egyptian hieroglyphics and in Greek. Because scholars already knew the Greek letters and words they were able to decipher the Egyptian equivalents. Today ancient Egyptian can be read with ease because scholars know the meaning of the symbols by which the ancient Egyptians recorded their experiences.

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[1] F. Bobbitt, *The Curriculum*, p. 230.

[2] H. C. Hill and R. L. Lyman, *Reading and Living*, Bk. II, p. ix.

[3] W. C. Bagley and J. A. H. Keith, *An Introduction to Teaching*, p. 90.

[4] J. B. Kerfoot, *How to Read*, p. 21.

Reading is an active process. Our discussion up to this point reveals clearly that our reading is not a process only of absorption and impression, a mere process of taking in; it is a process of expression and transformation, a process of responding to the revelations and interpretations of life by living a changed and changing life ourselves as the result of our reading.

Jesse says the truth is that the reading of books is like lovemaking in that it needs two individuals to make it succeed. It is not enough for an author to give; the reader must know how to take and not only how to take but how to give in return. Ruskin also in his *Sesame and Lilies,* calls attention to this essential element of active participation on the part of the reader. He says:

> There seems, to you and me, no reason why the electric forces of the earth should not carry whatever there is of gold within it at once to the mountain tops, so that kings and people might know that all the gold they could get was there; and without any trouble of digging, or anxiety, or chance, or waste of time, cut it away, and coin as much as they needed. But Nature does not manage it so. She puts it in little fissures in the earth, nobody knows where. You may dig long and find none; you may dig painfully to find any.
>
> And it is just the same with men's best wisdom. When you come to a good book, you must ask yourself, "Am I inclined to work as an Australian miner would? Are my pickaxes and shovels in good order, and am I in good trim myself, my sleeves well up to the elbow, and my breath good, and my temper?" And keeping the figure a little longer, the metal you are in search of being the author's mind or meaning, his words are as the rock which you have to crush and smelt in order to get at it. And your pickaxes are your own care, wit, and learning; your smelting furnace is your own thoughtful soul. Do not hope to get at any good author's meaning without those tools and that fire; often you will need sharpest, finest chiseling and patientest fusing before you can gather one grain of the metal.[1]

Evidently then the reading process demands vigorous mental activity on the part of the reader. This activity has been found to consist of three closely-related elements: reception, interpretative reaction, and expressional reaction. The whole process is similar to that of taking a picture, in which the first essential is a camera which may be focused on a definite object. Through a mechanism of lens, shutter, transmitter, and the like, light is transmitted to the negative, its reception apparatus. But this reception apparatus is incomplete until a plate is inserted on which the negative may be made. And finally the negative itself has little value until the finished picture has been developed from it. Similarly, in the reading process we have an instrument which serves the way the camera does, as the receptor and interpreter of stimuli. The eye with its equipment of neurones acts as the receptor, picking up the stimuli and carrying them to those cortical areas of the brain where interpretation takes place. Without an efficient interpretative apparatus in the brain the stimuli sent to it by the eye would have no meaning. And interpretation in turn would have little value if there were not some definite way in which this interpretation might express itself.

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[1] John Ruskin, *Sesame and Lilies,* "Lake English Classics," p. 53f.

If we are to become intelligent readers, then, we must recognize three aspects of reading: (1) an efficient receiving apparatus; (2) intelligent interpretation which includes understanding as well as knowing; and (3) reaction to what is read.

THE FIRST ASPECT: AN EFFICIENT RECEIVING APPARATUS

At the outset the eye must be trained to fast reading. The studies of Huey, O'Brien, Judd, Buswell and Gray have resulted in an exact knowledge of the work of the eye in reading. These investigators have demonstrated that when we read, the eyes move along the printed lines in a series of quick, jerky movements. Comprehension takes place only when the eyes stand still and not when they are in movement. Fast readers spend approximately twelve thirteenths to twenty-five twenty-sixths of their total reading time on stops, and approximately one thirteenth to one twenty-sixth of this total time in movement. Even more significant than swiftness of eye-movement is the amount seen at each stop. One should train his eye to see as much as possible between rests, thus reducing to a minimum the number of stops that he makes in a line. The slow reader is like a freight train which stops at every station. He looks at each word separately and hence he consumes much time in reading an assignment. The fast reader, on the other hand, is like an express train which stops only at large stations. He takes in a large unit of meaning between stops, three, four or more words, depending upon the nature of the reading material. The fast reader also develops the ability to move from one line to the next without hesitation. The slow reader is likely to return to the same line or even to skip a line occasionally. In addition the fast reader appears somehow to develop a certain rhythm in his reading. When the fast reader is timed, it is discovered that he reads each page at about the same rate. The slow reader reads each page at its own rate. He somehow fails to "get into the swing of it."

The assumption that the fast reader comprehends little while the slow reader comprehends much is erroneous. The scores made by thousands of students on standardized reading tests have convinced us that the correlation between high speed in reading and superior comprehension in reading is high.

The desirability of fast reading has led investigators to study the causes of slow reading. They have found a number of common causes. One of these is, as we suggested above, the short eye span which implies that the reader is placing too much emphasis upon individual words and not enough upon ideas as expressed in groups of words, such as phrases, clauses, and sentences. Another cause is vocalization. The reader actually says to himself, by visible lip movements, the words as he reads them. Although Gray found that in the most rapid readers there is still a trace of inner speech, that is, a muscular reaction in the vocal chords, yet rapid readers do not move their lips when they read silently. Gray declared that the fast reader should eliminate lip movements entirely and inner speech as much as possible.

A cause of slow reading may sometimes be found, of course, in the nature of the reading matter itself. If the material is not within the range of the reader's vocabulary nor of his experience the speed of his reading will naturally be slow. Other causes of slow reading are a lack of early training and an unlettered home and community environment, a poor quality of instruction in elementary and secondary school, lack of a previous opportunity to read extensively, sometimes race and nationality, frequently wrong habits of reading formed in early years, and last but not least, a lack of native capacity for learning, usually referred to as intelligence. Sometimes the mechanics of reading matter, such as size of type and quality of paper interfere with rapid reading. We have learned that it is well to select books printed in large type on unglazed paper, and containing illustrations; a good index and side notations are aids as well. Finally the student can further increase his speed in reading by providing the conditions which we suggested in Chapter VI.

We find then, that investigators of speed in reading say that in order to increase the rapidity with which we read we must increase our eye span; we must eliminate lip movements and inner speech; we must read ideas rather than words, read widely and constantly, add to our vocabulary, enrich our experience, use a time control,[1] find a reading interest if we do not have one, react constantly to our reading, and provide physical conditions which will make our reading both pleasant and profitable.

TABLE IV

Number of Words Read per Minute by College Freshmen

NUMBER OF WORDS PER MINUTE	NUMBER OF STUDENTS
400	4
380	4
360	6
340	9
320	16
300	24
280	42
260	64
240	69
220	83
200	47
180	39
160	13
140	9
120	4
100	2
Total	435
Median	245.9

Note: The Table reads: four students read 400 words per minute, four students read 380 words per minute, etc.

We can now understand the wide variation in individual reading rates which college students exhibit. In the fall of 1926 a group of 435 college freshmen in the University of Nebraska took a speed test on ordinary reading material. The scores are tabulated in Table IV.

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[1] See p. 173.

We note that four students in this group read four hundred words a minute, while two students read at the rate of only one hundred words a minute. In other words, some freshmen read four times as fast as other freshmen in the same class, when tested on the same reading material.

For the sake of insuring high efficiency in reading every student should test himself to see how fast he reads. If he finds that on ordinary reading matter he reads fewer than three hundred words a minute he should study his eye movements to determine whether he is looking at each word instead of at groups of words, i.e., whether he is reading words instead of ideas. He should also study his other reading habits in the light of our discussion on the speed of reading.

THE SECOND ASPECT: INTELLIGENT INTERPRETATION

Next after the need of a quick eye in reading we should consider the interpretation or comprehension of what the eye receives. We have already indicated that what we get out of our reading depends largely upon what we bring to it. A kodak becomes valuable only when a good negative is exposed. In order to convince himself how thoroughly mechanical his receiving machinery may become, the student need only recall how often he has arrived at the bottom of a page of reading matter only to arouse himself with a start, surprised to find that he has made no reaction whatever to the printed page that he has just read. Success in reading calls for alertness, and alertness in turn demands a background of experience which ought to be wide, varied, and intimate.

If there is no experiential background, that is, a background resulting from experience, any attempt at interpretation will be futile. To bring home the force of this we might ask a child of eight to read a discourse on Einstein's theory of relativity or Wordsworth's poem "Intimations of Immortality," and see how much of it he understands. The success with which a student pursues any activity will depend upon the breadth and the depth of his experiences touching it. This is particularly true in reading. He must be familiar with the vocabulary and the general ideas which the writer attempts to convey to him. C. Alphonso Smith, in response to the query "What can literature do for me?" emphasizes the importance of bringing an understanding mind to a reading selection in order to get something out of it. He suggests that the student make his approach to literature not from the fact side but from the heart side. He must begin his reading in the field of literature at the point where he and it have a common interest. He must see in it an outlet, not an inlet. The life of a poet, the date of his work, the kind of meter he employs, all have something to do with a poem but they are secondary matters, not primary. The first thing to do is to find oneself in the poem. When a poem once means something to the student, when he sees in it a reflection or extension of himself, when it becomes a real outlet for him, he will want to know something about the writer of it.[1] Headley says correctly:

> No two readers can get the same impression from the same piece of text. That which different readers get from a given article depends primarily on the several backgrounds of experience which they bring to bear upon it. The extent of the reader's contribution must necessarily depend not only on his personal background but also on the nature of what is being read. Some writings,—some of the best writings,—are essentially goads to the imagination. Their authors purposely leave unsaid most of what might be said. Other writings are so concerned with the setting down of facts that there is less opportunity for the play of a reader's thoughts. But the full meaning of the most factual statement can be grasped only in so far as it is clothed with related facts and fancies. That we are not possessed of information and understanding sufficient to quicken every statement which we read is only too evident. The tragic thing is that most of us are too indolent to throw into action the possessions which are ours.[2]

Of the need of a bond of understanding between writer and reader, George E. Woodberry has this to say:

> Literature is an art of expression. The material which it employs is experience; or, in other words, literature is the expression of life. Action, emotion and thought are the three great divisions of life, and constitute experience. Literature undertakes to represent such experience through the medium of language, and to bring it home to the understanding of the reader. It is obvious that literature makes its appeal to the individual mind and is intelligible only in so far as the individual is able to comprehend its language and interpret the experience there embedded. A good reader is an author's best fortune, for the writer strives in vain unless he be understood. The reader's own experience is the key to literature.[3]

Since wide experience is so necessary to comprehensive reading the intelligent student will constantly take advantage of every opportunity to enlarge and enrich his experience. College life affords many such opportunities. There are special lectures on a wide variety of subjects; there are museums and art galleries; there are public entertainments, concerts, shows, and plays; there are field trips and excursions; there are student activities, including debating teams, literary societies, Y. M. C. A., Y. W. C. A., student councils, library clubs, and science clubs; there are conventions, convocations and special meetings of many kinds. The student should choose wisely from these many activities, engage in them himself as much as possible, and exercise his power to see and hear and especially to understand. Successful men and women enjoy reading greatly because they bring to their reading so much of first-hand as well as of vicarious experience.

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[1] C. Alphonso Smith, *What Can Literature Do For Me?*, p. 11f.

[2] L. A. Headley, *How to Study in College*, p. 277.

[3] G. E. Woodberry, *The Appreciation of Literature*, p. 1.

The student will be interested to note how our present-day philosophy of education emphasizes this enlargement and enrichment of experience. Our elementary and secondary schools, by providing shops and laboratories, cooking and sewing rooms, libraries, assembly rooms, gymnasiums, music and art rooms, reveal a desire to enrich the experience of the child by linking up what he does or learns to do in school with what he does outside of school. With the same object in view there have been introduced into the curriculum of today nature-study and general science, club-work of different kinds, athletics, school-gardening, community civics and similar activities in which children may broaden their experience in the realms of human endeavor. The high school boy and girl are given opportunities to acquaint themselves with the actual operation of the institutions, and the practical application of the principles about which they have studied. Thus, classes in civics visit a session of the legislature or of court, or a town meeting or a party caucus; a class in physics is taken on a tour of inspection through an electric power plant or machine shop; a class in cooking inspects a canning factory, a flour mill or a grain elevator, or is shown how a modern sanitary creamery, bakery or cafeteria operates. In such direct ways as these boys and girls are brought into immediate contact with the active life of the world of which they will soon be a part, and the sum-total of their experience is immeasurably enlarged and enriched thereby. In addition, the introduction of numerous modern conveniences make it possible for young people today to have a range of experience undreamed of a century ago. Easy communication and transportation and the consequent increase in the extent of social contacts also, have enlarged experiential opportunities. Modern life, in school and out, offers numberless opportunities for direct, personal experience to the pupil in school.

And yet college freshmen reveal a marked inequality in the mental backgrounds which result from the wide and varied personal experiences of the years in elementary and secondary school. This inequality shows itself distinctly in the striking range of variation in comprehension which our standard tests in reading reveal. In the fall of 1925, 305 college freshmen at the University of Nebraska took the test called the Thorndike-McCall Reading Scale. Table V shows the standard scores for this scale made in the grammar and high school grades. Table VI shows that while the average score in the test of

TABLE V

Standard Scores on Thorndike-McCall Reading Scale

Grade 5A	44.9		Grade 8A	59.6
" 5B	48.0		" 8B	60.9
" 6A	50.9		" 9A	61.5
" 6B	53.7		" 9B	62.1
" 7A	56.0		" 10B	63.6
" 7B	58.3		" 11B	65.4
			" 12B	68.1

TABLE VI

Scores Made by 305 College Freshmen on Thorndike-McCall Reading Scale

SCORES	NUMBER OF STUDENTS
85	2
80	14
75	28
70	48
65	111
60	41
55	56
50	3
45	2
Total	305
Median	67.27

college freshmen was slightly below the average for grade 12B in the standard score, the two extremes among the college freshmen were forty points apart, the highest being 85 and the lowest 45.

The causes for such a wide variation in comprehension are many in number and complex in nature. Slow readers whose comprehension is low do not always exemplify the same weaknesses, nor do fast readers whose comprehension is high always reveal the same virtues. Ten definite directions by following which a student may increase his comprehension, will be discussed briefly.

1. Have a definite purpose in reading. Perhaps the most potent factor affecting comprehension in reading is a driving purpose as to the object of one's reading and an interest in what the author has to tell. The student who has a definite purpose will understand more fully than one who reads in a desultory manner. Even if an instructor fails to indicate the purpose of a reading assignment the student should at the outset determine its relationship to the topic under consideration in class.

2. Endeavor to concentrate. Somehow we must learn to ignore the distractions which constantly surround us if we are to understand what we read. When we are genuinely interested in what is before us, we concentrate as a matter of course. If, however, as is frequently the case in the study of class room subjects, our interest is not intense we must then consciously exclude all distracting stimuli from our environment and from our minds. We can help ourselves greatly if we will follow the suggestion made by Bennett when he says that we must put ourselves at the disposal of the book. We must read with the whole force of our brain. We must consciously attempt to possess, coördinate, and assimilate all the ideas and sensations which are offered by the writer.[1]

3. Get the plan of the writer. By consulting the table of contents in a book, one may take a bird's-eye view of the field that the writer covers. In the case of a chapter the student may take the same general view by making a hasty preliminary perusal of it. Frequently a writer explains in the first paragraph of his chapter or article what his plan is, and he may even summarize at the end the material which he has set forth. Most writers use a topic sentence as a key to each paragraph.

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[1] Arnold Bennett, "Translating Literature Into Life," *The Bookman*, 50:99 (September, 1919).

Usually this topic or key sentence is placed at the beginning of the paragraph, sometimes at the end; the rest of the material is largely explanatory or illustrative of what the writer has said in that sentence. Some writers put a key sentence at the beginning of the paragraph and a summarizing sentence at the end. Occasionally the key sentence may be found in the middle of the paragraph. With a little practice, the reader can learn to find the trend of an article or a chapter by reading the first sentence of each of the paragraphs which compose it. This will enable him also to locate within a chapter any specific information for which he is looking.

4. Help the writer by supplementing his thought. The association of the reader's experiences with the ideas presented to him as he reads will also increase his comprehension. McMurry emphasizes the necessity of supplementing an author's thought on the part of the reader. He regards as important also the reorganization of the reader's knowledge which comes as a result of reading. The good reader, he says, arranges these facts in groups according to their relations, recognizing a few as having supreme importance, subordinating many others to them and casting aside still others because of their unimportance. Lyman supplements McMurry's ideas by recommending that the reader help his author by recalling experiences of his own which corroborate what he reads. Lyman says:

> Keep the mind alert, constantly asking questions of the writer. Of course, we do not mean petty questions like "Why did you write this stuff?" or "How old were you when you wrote?" We have in mind, rather, vital questions like these: "How does the point you are now making tie up with the preceding?" "What does it add to your central idea?" "What proof or illustration will you advance to make good the general statement you have just made?" . . . The process of reading is an active contributive process, in which the reader supplies data out of his own life and thinking. And these data flash through the reader's mind in extremely abbreviated form. Very frequently, it is a good plan deliberately to stop reading when, in your studying, a flash of thought thus comes to your mind, and to give that supplementing thought a free chance to develop as far as it will. Help the writer by thinking of examples of your own which differ from those he writes about. Contrast is a very effective method of bringing out meaning. . . . It is quite possible to help the writer by recalling both differing and similar experiences. You may have been in a position to witness scenes similar to those he describes, and at the same time may have in your own life a startling contrast of conditions. If so, you are a

good reader in this respect at least; and the more supplementary experience you have to draw upon, the better reader you are."[1]

5. Increase your vocabulary. Extending one's vocabulary is another valuable way of increasing his comprehension. Words are the units by which writers present their ideas. If a student does not know the meanings of words, he cannot hope to grasp an author's thoughts. The student may increase his vocabulary by increasing the range of his experiences, or by making a careful study of the various shades of meaning which certain words possess. Every student should have constant access to a reliable dictionary to which he may turn to discover the fine shades of meaning which writers employ. Gray, in his experiments, demonstrated that much of the poor quality of comprehension in reading is due to ignorance of the meaning of words. In the elementary school, teachers use exercises to bring out the meaning of certain words to be used later in reading exercises. Such anticipation of new words, of course, is impossible on the part of the college student, but he can help himself much by making it a point to look up in the dictionary every word which is unfamiliar to him. At first this may seem like a laborious task, but if practiced diligently he will discover that it is exceedingly worth while, and that it may lead into unsuspected by-paths of interest.

6. Use practice exercises. Fordyce tells us how one may increase both his speed of reading and his comprehension by using a set of practice exercises. The first set devised by Fordyce consists of sentences of two words each. The succeeding sets gradually increase the length of the sentence and the size of the comprehension span. It is possible to secure such sets of exercises and by daily practice greatly to increase both speed and comprehension; or one may select easy reading material and by emphasizing ideas instead of words increase materially his ability to comprehend.

7. Use a time control. A time control too has been found helpful in increasing comprehension. By deciding at the outset of a reading assignment that it must be done within a specified period of time one's whole attention tends to be concentrated on the task at hand.

8. Verify your guesses. A good reader must develop the prophetic instinct. He must guess much. He must anticipate developments and

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[1] R. L. Lyman, *The Mind at Work.* Scott, Foresman and Company, 1924, p. 196ff.

predict outcomes in his reading. If, after hastily scanning his reading assignment to get the author's trend he is able to make a wise guess as to the author's line of argument, he can spend the remainder of his time in verifying his guess rather than in arriving at the same end by the slower process of reading carefully every word.

9. Make definite reactions. One suggestion as to how we may link up our interpretation with a definite reaction is to outline what we read. The act of outlining an article or a chapter as we read it compels us to be alert throughout our reading, and at the same time it serves as an incentive to us to look for the outstanding points in what we read. Another way of reacting to what we read is to summarize. Experiments show that many people assume that they understand what they read, but when they are asked to tell, in a few words, the content of their reading, they find it difficult to make a summary. It is a good practice to read an article in its entirety, then to close the book or the article and write out a résumé in one's own words. Many readers make reactions to their reading material by marking their books, either by underscoring words or sentences which they consider important, or by making marginal notes in which they give expression to their reaction to the printed material especially in regard to important points. Other readers do both.

10. Be open minded. If one desires to respond with unprejudiced reactions to the printed page he should endeavor to bring to all of his reading an open mind. By an open mind we mean a willingness to give the writer a fair opportunity to tell his story or set forth his argument. It does not promise that the reader will accept everything that the author says but it does imply an attitude of willingness on the reader's part to consider seriously what is presented to him. Some readers fall into the habit of approaching each piece of reading with an adversely critical mind. They consciously look for weaknesses, especially for those things with which they disagree, and they fortify their biased attitudes by retaining in mind only those things which support their opinions. Other readers go to the other extreme and approve everything they read. The judicious reader is somewhere between these two extremes. He approaches his reading material with an open mind. He carefully considers what is said and passes judgment on it. If, after consideration, he does not agree he criticizes it adversely. If, on the other hand, after he has carefully weighed the

statements made, his own experience and his own judgment bear out the validity of what is said, he accepts it. Lyman says:

> We are to develop our powers as readers by thinking of our duties as active partners of the authors whose books we read. Our share of the joint investment is liberal contributions from our own experiences. We may profitably ask of our partners pertinent questions and then look for their answers; we may summon from our own mental stock data which support and data which oppose their views. The dividends we are to reap depend to a very large extent upon what we do to and with the materials which writers place before us.[1]

THE THIRD ASPECT: REACTION TO WHAT IS READ

The final step after the mind has comprehended what the eye has seen, is one's reaction to what he has read. Interpretation, of course, is reaction, and it is in reality, the primary reaction in the reading process. But in order to make the interpretation more definite and of more lasting value the reader makes certain secondary reactions also. These aid in fixing in his memory the facts he wishes to remember. They serve as a means of reconstructing his experiences so that he may do future reading with increased insight. We shall consider some of the more important of these secondary reactions with the expectation of seeing examples when we discuss the making of notes on reading in Chapter IX.

1. Making marginal notes[2] constitutes one type of reaction to one's reading. Hall-Quest says:

> Margins are generally included in printed material for aesthetic reasons as well as for the necessities of the printing press. Pupils in school not infrequently find the margin an opportunity to develop latent talent of caricaturing. Frequently the margin is filled with idle jottings, ugly forms, and meaningless scribbling, witnessing to the vagaries of a wandering attention. It has finer possibilities, however. . . . The possibilities of the margin are immeasurable. Here the pupil or the reader is invited to deal intimately with the author through his book. Nothing is more attractive to the real student than a book well thumbed and scented with the presence of fine thinking on its contents. Books so often lie cold and ignored even though read and com-

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[1] R. L. Lyman, *The Mind at Work.* Scott, Foresman and Company, p. 200.

[2] It is perhaps needless to say that marginal notes, underscoring, and other markings are to be made only in the books that the student owns. Students should heed diligently the suggestions made on p. 138f. concerning the care of books which do not belong to them. Even in one's own books it is well to make all entries very neatly and not to mar the text.

mented on. They lack the touch of the individual reader. Written for many, they, however, depend upon the individual's opinion and criticism for favor and influence. . . . What is true of the margin is equally true of the flyleaves. They offer large opportunities for personal comment of the best kind.[1]

2. Underscoring important words, phrases, and especially key sentences will help the student to discover what is most important in each paragraph. It will also save a large amount of time when he reviews the material for tests and examinations.

3. Outlining constitutes a highly valuable kind of reaction to one's reading. The outline is a reader's reconstruction of an author's material. It helps him to visualize the plan of the writer; it serves as a guide through the sentences and paragraphs of discussion; and it enables him to remember the essential parts, besides serving as a framework which the student can fill in with his own modes of expression. But most important of all perhaps it clarifies the student's own thinking.

4. By means of paraphrasing, our understanding of what we read may be increased greatly. The paraphrase repeats the essential ideas of the writer in the words of the reader. C. S. Thomas shows how the twelfth chapter of *Ecclesiastes* may be paraphrased. The original reads as follows:

> 1 Remember now thy Creator in the days of thy youth, while the evil days come not, nor the years draw nigh, when thou shalt say, I have no pleasure in them;
>
> 2 While the sun, or the light, or the moon, or the stars, be not darkened, nor the clouds return after the rain;
>
> 3 In the day when the keepers of the house shall tremble, and the strong men shall bow themselves, and the grinders cease because they are few, and those that look out of the windows be darkened,
>
> 4 And the doors shall be shut in the streets, when the sound of the grinding is low, and he shall rise up at the voice of the bird, and all the daughters of music shall be brought low;
>
> 5 Also when they shall be afraid of that which is high, and fears shall be in the way, and the almond tree shall flourish, and the grasshopper shall be a burden, and desire shall fail; because man goeth to his long home; and the mourners go about the streets:
>
> 6 Or ever the silver cord be loosed, or the golden bowl be broken, or the pitcher be broken at the fountain, or the wheel broken at the cistern.

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[1] A. Hall-Quest, *Supervised Study*. Copyright 1917 by The Macmillan Company. Reprinted by permission. P. 170f.

> 7 Then shall the dust return to the earth as it was; and the spirit shall return unto God who gave it.

Thomas paraphrases the foregoing thus:

> Remember thy Creator in the days of thy youth, before the near approach of old age, with its fatal weaknesses and its inability to respond to the pleasures of physical existence. We spend our early years in the luster of life; the sun is ablaze, the moon and stars shine clear. We even note undisturbed the return of the clouds after the rain. When we grow old our bodily powers will wane, the arms ("keepers of the house") will tremble in weakness, the legs ("the strong men") will bow themselves, the teeth ("grinders") will fail to perform their function, the eye will be blinded, and deafness will come upon us. Even the singing of a bird early in the morning will awaken us, and the sounds of the voice will grow weak and low. We shall quail at the thought of climbing in high places and shall be menaced with fears. Our hair will turn white, we shall be disturbed by the merest trifle ("the grasshopper shall be a burden"), and all ambition will cease. In our imagination we shall see the grave ("the long home") and shall hear the mourners wailing our death—all this before death actually threatens.
>
> When the crisis comes, our body will immediately return to the earth and our soul to God who gave it.[1]

5. Summarizing is another type of reaction which greatly aids in our understanding of what we read. This is frequently designated the *précis*. Here the reader not only gives the ideas of the writer in his own words but in addition he condenses them. Hall-Quest says:

> The summary or gist of the lesson is stated in the student's own words. It should be a condensed brief or review of a paragraph or whole lesson. This implies that the student has already discriminated between the important and the incidental features of the paragraph. A summary that simply repeats with a few verbal changes the contents of the next lesson is not a summary—it is virtually a copy. Summarizing is difficult work. In its highest form it becomes a rare literary art as well as a beautiful evidence of clear thinking. The man who can seize upon the essentials of a situation, a case, a book, and report these briefly and at the same time clearly is valuable to society. He is likely to be an excellent book reviewer, an alert and prompt journalist. A valuable method is to require the students to write a summary of the chapter being studied and later a summary of the whole book or of the whole course.[2]

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[1] C. S. Thomas, *The Teaching of English in the Secondary School,* pp. 9-10.

[2] A. Hall-Quest, *Supervised Study*. Copyright 1917 by The Macmillan Company. Reprinted by permission. P. 168f.

6. An appreciation of what we read is another form of reaction but of a much less definite, more abstract sort. The value to us of our reading can be increased not a little if we enjoy what we read. Purpose in reading is an essential starting point, but enjoyment is the force which carries us along in our reading and brings us back to it when we have been away from it for a time.

Appreciation has its center in emotion or feeling. Appreciation may be developed best, therefore, by reading the "literature of power" as De Quincey called it, in which the emphasis is on insight touched with fine feeling. Lyman shows that the writers of literature of power attempt

> . . . not so much to teach external facts as to interpret internal meanings. Looking upon the larger aspects of virtue, wickedness, aspirations, despair, brotherhood, service—the characteristics of personal and social relationships of the larger sort—such authors portray the permanent significance of the facts of life about which they write. It may be better to say that they deal with the spiritual rather than the material aspects of life and that their major purpose is the portrayal of these larger facts. Someone has said that a poet does not look at an object; instead, he looks into it.

The study of reading matter for cultural purposes includes, he continues, in addition to its content:

> . . . the form, the style, the literary artistry. Obviously, the duty of a man who writes a textbook in history, or a magazine article on a problem of the day, is to give his readers a clear, well-organized explanation for their understanding. But one who is attempting to convey to others the charm of a violet, the sanctity of human sacrifice, the majesty of mountains, the terror of a storm, or the calm beauty of an April morning, needs to present the facts of his theme in form which is in keeping with the sentiment he desires to portray. We say that his writings have "style." He says what he means in a manner which is appropriate to and consistent with that meaning. His very words, sentence rhythm, harmony of sound, and the like are in keeping with the interpretation of life which he desires to represent. In this class of literature as such, of *belles lettres* the French call it, lies the realm of purely cultural reading.[1]

QUALITIES NECESSARY TO INTELLIGENT READING

1. The efficient reader exemplifies a number of desirable qualities in his reading, the first of which is the ability to begin. It is pre-

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[1] R. L. Lyman, *The Mind at Work.* Scott, Foresman and Company, 1924, p. 299f.

eminently true that the way to begin any activity is *to begin.* Some students waste five, ten, twenty minutes before they can get under way in any undertaking. The capable student begins "on the dot" and has already accomplished much before the inefficient one makes his start. Athletes have learned the importance of a quick get-away in football and in track. All other conditions being equal, he who makes the best beginning wins the race. The efficient student gathers together the materials he needs for his study and straightway goes to work. There is none of that shiftlessness which is so characteristic of the student who constantly complains that he can't finish his lessons in the allotted time. When the pre-determined hour for studying a lesson comes, take your book, open it to the page or chapter where the lesson begins and start your reading with your attention focused upon it. In so far as it is possible ignore the rest of the world. In a short time you may feel the same joy of conquest which spurs the sprinter on to remain ahead of the bunch.

2. The second quality of a good reader is his ability to take a bird's-eye view of the article or chapter as a whole, a method of approach to which we have already referred.[1] If the student will watch some of his instructors in the magazine room he will notice their habit of picking up a magazine, glancing quickly over the table of contents and then opening it to some article of special interest. Finding a seat, such an instructor will probably go over hastily the article in question. He may read the introductory paragraph with care, then he may run hastily through the succeeding pages to get the writer's general plan, ending by a more careful reading of the conclusion. If the article seems to warrant it he will return to an intensive reading of the entire article. The writer has watched efficient readers pursue much the same course in the stack room of the library. Such a reader may take a book from the shelves to examine the table of contents and to glance hastily through a promising chapter. If such a perusal seems to offer the information sought, he is likely then to take the book to a comfortable place where he may read the passage that interests him with care. The student should form this habit of first reading through rapidly every assignment in order to grasp the general plan of the writer and to locate those portions of the article which are really pertinent to his purpose.

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[1] See p. 171.

3. The third quality of an efficient reader is the ability to comprehend clearly the purport of his reading. After he locates in an article or a chapter the material which meets his need he must digest it thoroughly. He must make certain that he understands the writer's meaning. At this point he must make sure also that he perceives the connection between what he is reading at the time and the topic under discussion in his course. If he comprehends well he will remember well.

4. A fourth quality is his ability to make one or more of the secondary reactions to what he reads as suggested on pages 175 to 178. The efficient reader is not satisfied with mere comprehension of what he reads *as* he reads, but he indicates by his reactions the value he sets on what he has read. He may make marginal notes, he may underscore, outline, summarize, paraphrase or express in some other form of appreciation how he feels about what he reads. Of much greater value than these, however, is the reaction that takes the form of a mental reconstruction of experience. He may use neither pencil nor pen but his existing ideas may be modified mightily. The first reading of such books, for example, as H. G. Wells's *Outline of History,* and J. Arthur Thomson's *The Outline of Science* doubtless had such an effect on thousands of readers the world over. At other times this mental reconstruction may represent, in the main, a process of accretion. Such an addition to one's store of knowledge would result from reading about other peoples and places, about customs and traditions in other countries, about other religions and governments, each group of newly acquired facts, however, having its influence upon one's whole mental background.

5. A fifth and final quality of the efficient reader is an ability to fit the results of reading systematically into a growing personality. We have said elsewhere that the chief function of a college career and indeed of life is to build personality. The final object of reading is not primarily to amass a wealth of information nor to acquire voluminous knowledge. Information and knowledge become valuable only if they function in life. The possibility of growth from one's reading becomes the touchstone by which every reading activity is evaluated. Constant attention to the effect of one's reading on his personality leads to the building of interests which persist through life. It is not an accident that virtually all great men and women are constant readers, who display a remarkable range and intensity of interests. The truly edu-

cated man has developed an ability to utilize the results of his reading in the development of his personality.

SUMMARY

It has been our purpose in this chapter to show how the ability to read may be improved. We find that the reading process is essentially an active and not a passive one. It consists of three steps, reception, interpretation, and reaction. The physical machinery through which the stimuli from symbols are transmitted to the interpretative centers is the eye with its many neurones and muscles. Reading takes place when the eyes stand still, and hence eye movements in reading become significant. The efficient reader makes few pauses per line. Interpretation depends much upon a background of experience. In order to increase comprehension the student is encouraged to come to his reading with a purpose, to concentrate, to grasp the plan of the writer, to associate ideas, to increase his vocabulary, to use practice exercises and a time control, to make reactions and to keep an open mind. Reacting to what he reads is desirable because it increases comprehension, it aids memorization, and it assists in the reconstruction of experience. The types of reaction mentioned include making marginal notes, underlining, outlining, summarizing, paraphrasing and cultivating an enjoyment in what one reads. In the concluding section we discussed the qualities which an efficient reader exemplifies when he reads an article or a chapter.

QUESTIONS

1. Show how reading, experience, and life are related.
2. Defend the statement, "Books are storehouses of symbols."
3. Is reading a passive or an active process? Justify your answer.
4. Name the three essential elements in the reading process.
5. Explain the nature of the apparatus by which the meaning of what we read reaches the brain. How is this apparatus related to speed in reading?
6. Show how important the experiential background is in the comprehension of what one reads.
7. Name ten factors which influence comprehension in reading. Show how each may be used to increase efficiency in reading.
8. Tell how each of the following types of reactions may increase ability to read: marginal notes, underscoring, outlining, paraphrasing, summarizing, enjoyment in reading.

9. How does a good reader proceed in reading a chapter in a book or an article in a magazine?
10. What suggestions in this chapter will aid you in improving your ability to read rapidly and with understanding?

EXERCISES

1. Explain the statement, "What we get out of our reading, depends upon what we bring to it."
2. Determine the efficiency of your reading apparatus by timing yourself on the following passage. Write down the time when you begin or have someone tell you when to begin. Read as rapidly as possible, remembering however that you will be tested for comprehension. When you have finished note the time again.

Note the time. Begin reading.

THE NEED FOR A STUDY OF FOREIGN LANGUAGES

As a people we do not realize sufficiently that the day of "splendid isolation" is past. We stand on the threshold of an era in which we shall be compelled to participate actively in the affairs of the world, if we expect to retain our place as a leading nation. Although we still have the resources to supply our needs in case of a world war, our international relations are multiplying so fast that it will be increasingly difficult to maintain our independence and self-respect if we do not engage in a wholesome social intercourse with the rest of the world.

Our manufactured products are being distributed on every continent and, contrariwise, we are utilizing products which come from every continent on the globe. The astounding increase in speed of locomotion, as we find it in the passenger express, the ocean liner, the automobile and the aeroplane, has reduced distances to such an extent that countries and even continents are as close to each other today as provinces and counties were yesterday. Means of communication, such as the telegraph, the telephone, and the radio, are drawing the ends of the earth together into a great common community.

While we have not yet joined the League of Nations, we are involved in its every transaction. Already more than three hundred American men and women are employed in the Secretariat of the League of Nations at Geneva. We are about to become a member of the Permanent Court of International Justice. Already one of our eminent jurists sits as a justice in that court. Every year we are asked for help or advice in the settlement of serious political, economic, or social problems in all parts of the world. Recently we sent peace makers to South America and today messengers have arrived at Washington to seek our aid in the settlement of the difficulties in Mexico.

How can we give advice or help if we are not thoroughly familiar with the situation in every case?

The "internationalizing" process is going on with similar intensity in other fields as well. Our newspapers are becoming more cosmopolitan, our magazines are losing their provincialism, our amusements show the influence of foreign ideas and ideals, our artistic standards are being modified by an extensive reading of the literature of other countries, and by listening to their music; and we are entering many sports which are throwing us into close relationship with all the peoples of the world. Our track stars engage in the international Olympics, our golfers win and lose cups in England, our women swim the English channel, our tennis stars meet the champions of other countries. Recently an American, a Swede, and an Italian piloted a giant airship across the wastes of the Arctic, exploring the regions around the North Pole.

Participation in the affairs of a modern world demands a type of training which this country has never seriously considered. Our ambassadors to foreign countries have long since complained that we do not give them a fair chance to represent this great country because we do not give them the proper training for their work. Although hundreds of thousands of American boys and girls study foreign languages in our schools, nevertheless an amazingly small number ever gain sufficient familiarity with the languages which they study to help them in their attempt to interpret foreign life or to represent this country in a foreign land. What we need in our country is an increase in the number of students who will really master one or more foreign languages. In order to achieve this mastery there must, first of all, be more emphasis on the training of teachers of foreign languages. The least that we should expect is that our teachers of foreign languages should be masters of the languages which they are to teach. Then, in the second place, the period of training for our pupils must be greatly lengthened. Instead of taking a foreign language for a year or two, the student should expect to take it for eight or ten years. No American has yet mastered his own tongue in a shorter period of time. And, thirdly, we must place more emphasis on reading and speaking the foreign language and less emphasis on the study of the structural elements of the language. If we emphasize the ideal of mastery in our foreign language study, if we seek to attain a real insight into and appreciation of the speech of foreign peoples, we have taken the first step toward a solution of our great international problems.

Note the time. Write down the number of seconds that it took you to read the foregoing passage.

Now answer the questions below. These will test your comprehension on the above passage. The questions should be answered without referring to the passage.

COMPREHENSION IN READING

All of the following questions are based on the passage which you have read.

1. Does the spirit of the selection imply that we should take more or less interest in international affairs?

   Answer____________________

2. According to the opinion of the writer, what will the United States lose if it does not participate actively in international affairs?

   Answer____________________

3. If reference is made to both imports and exports place the number 1 in the blank for the answer; if reference is made to exports only, place the number 2 in the blank; if reference is made to imports only, place the number 3 in the blank; if no reference is made to either imports or exports place the number 4 in the blank.

   Answer____________________

4. Name two means of locomotion which are mentioned.

   a____________________

   b____________________

5. What did the writer say that means of communication were doing for the world?

   Answer____________________

6. Does the writer say specifically that we should join the League of Nations?

   Answer____________________

7. How many jurists already represent the United States at the Permanent Court of International Justice?

   Answer____________________

8. How many American men and women are already employed in the Secretariat of the League of Nations at Geneva?

   Answer____________________

9. To which continent did we send peace makers recently?

   Answer____________________

10. From what country have messengers been sent recently to implore aid in the settlement of an internal difficulty?

    Answer____________________

11. Enumerate one tendency in the life of the American people which shows that we are becoming "internationalized."

    Answer____________________

12. How many nationalities were represented on the giant airship which recently explored the region about the North Pole?

Answer________________________________

13. Of what have our ambassadors complained?

Answer________________________________

14. According to the opinion of the writer is the number of American boys and girls who master a foreign language large or small?

Answer________________________________

15. Name one suggestion that the writer makes to improve the results in our study of foreign languages?

Answer________________________________

When you have answered the questions turn to page xxi of the Appendix for the correct answers.

Score____________________

There are 763 words in this passage. Divide this number by the number of seconds it took you to read it, then multiply by sixty to get your rate per minute. If you find that you read less than three hundred words per minute follow the suggestions made in this chapter for increasing your speed of reading.

4. Secure a copy of Form 1 or Form 2 of the Thorndike-McCall Reading Scale. Follow instructions for taking the test. Ask your instructor to score the test. How does your score compare with the standards on page 170? If you find that your comprehension in reading is low make a visit to the department of educational tests and measurements and request a thorough examination to discover the difficulty.
5. Select the key sentences in the first seven paragraphs in McMurry's *How to Study,* page 80ff. In how many of them is the first sentence in the paragraph the key sentence?
6. Read the passage at the bottom of page 26 in Thomas' *The Teaching of English in the Secondary School.* Then determine the quality of the five précis on page 27. Number the best précis 1, the second best one 2, etc.
7. Make a précis of the paragraph beginning, "The student's purpose in preparing an assignment," page 345 in Book. (Sel. Ref. 2.)
8. Discuss the importance of making reading an active process. (Sel. Ref. 7 and 10.)
9. Read Sel. Ref. 3 for help in discovering your bad habits in reading. Read Sel. Ref. 2, 4 and 5 to make your reading of textbooks more effective. Read Sel. Ref. 5 and 11 to make your reactions to what you read more effective. Read Sel. Ref. 3, 4, 9, 12 and 13 to increase your speed and comprehension in reading.

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CHAPTER IX

MAKING NOTES

In a previous chapter we made the assertion that when a person studies he must be mentally active. This activity in study is at no time more conspicuous than when one is making notes. Notes should represent effective responses to the lectures which one hears and to one's reading, and the making of them requires a constantly alert mind. Somebody has remarked, "Show me your notebook and I will tell you how your mind works." Seward says:

> The listener indeed has a share and an important one. The lecturer's part is clear, the listener's not so much so. . . . [One who profits from study] is not content to sit passively and be pumped into; that gives no play to his own mind. Nor will he be an automatic recording machine; that calls for industry, but scarcely intelligence. His part rather is one of active mental effort. The speaker's mind acts, and his reacts and assimilates; it recognizes important matter, observes digressions, takes note of illustrations, relates part to part, and distinguishes the true sense from other meanings likely to become confused with it.[1]

This demand for mental activity on the part of the student suggests the important difference between making notes and taking them. When he *takes* notes the danger is that the student will write down what he hears or reads without thought as to whether he himself agrees with it. But when he *makes* notes the implication is that he has done something with what he has heard or read. Through his notes he digests and makes his own what is valuable or memorable in his reading and observing. This is why we shall discuss note-*making* and not note-*taking* in this chapter.

VALUES OF MAKING NOTES

Notes should represent the student's own thinking. Of what he hears or reads he should write down both what he accepts and what he rejects, making clear his reasons in each case. The most serious objection to note taking has always been the danger of writing down what one sees or reads without thinking it over and passing judgment on it.

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[1] S. S. Seward, *Note Taking*. Allyn and Bacon, 1910, p. 3.

Somebody has said, "The taking of notes is that process whereby the words of the instructor pass to the notebook of the student without passing through the mind of either." If the student will make it a rule never to write a note which is not his own either by direct acceptance or by modification based on past experience, he will soon develop the habit of listening and reading actively and not passively.

This development of keenness of judgment in passing on what one hears and reads constitutes one value of note-making. Another value lies in the possibility of preserving permanently the reactions which the student makes to what he reads or hears. If his notes are carefully made and preserved he may use them to advantage in preparing for tests and examinations, since it is quite impossible for him to go back and reread all of the books and references which he has read during a given term. It is manifestly out of the question for him to go back and hear again the lectures which have been delivered by an instructor. If he has failed to react through note-making to what has been said during lecture hours he has lost forever the opportunity of reacting in that way to it. It is clear then how important it is for the student to be fully alert, to react consciously to everything that is done and said, and to make a written record of these reactions so that they may be available when the time for testing comes.

Notes have a further value in that they serve as guides to direct the work of each day. If the student carefully notes the assignments of the instructor at the end of a class hour, he need waste little time and effort when he comes to prepare the lesson for the next period. He is expected to cover the whole assignment. If the instructor were to assign four items in a lesson and the majority of his students were to prepare only two of them, the efficiency of the group naturally would be much below par. Hence, in order to be sure of well-prepared lessons the student must take down accurately the lesson assignments made from day to day. Notes have yet another value in the use to which they may be put in the student's later college work, or even after college in his vocational or professional career. If he is to become a teacher, for example, he will be fortunate if he can take with him on the day of his graduation from college, a complete set of notes. In his first year of teaching in particular he will very probably find many opportunities to use them if they have been made well. Many teachers have found their notes of inestimable value.

OBJECTIONABLE WAYS OF MAKING NOTES

Before we discuss in detail some of the desirable ways of making notes, it may be well to mention certain undesirable ways of making notes. (1) One objectionable practice is to attempt to write down too much of what one hears or reads. Some students try desperately to write down everything they hear in a lecture, and they write out long quotations from books which they read. If the student will remember that his notes should represent his own thought and his own reactions to what he reads and observes, he will spend most of his time while listening in the classroom, and while reading, in considering what he hears and what he reads. Then after due thought on what he has heard or read he will write down his own reactions.

(2) Another objectionable way of making notes is to jot them down on such loose scraps of paper as happen to be at hand during one's reading or listening. If the student will secure a standard notebook and carry it with him always, he will find it unnecessary to write his notes on such odds and ends of paper as happen to be available during the lecture or study-period.

(3) A third objectionable way of making notes is in shorthand. This applies almost exclusively to making notes of lectures. One frequently hears students regret that they are unable to take down in shorthand everything that they hear. But shorthand is not to be recommended for several reasons. First of all, the student occupies his entire time in writing down what the lecturer says with the result that there is little or no time to consider the merit of what he hears. At the end of the lecture hour, he is confronted with the necessity either of transcribing his notes or of reorganizing them for his notebook. To transcribe them will take as long as it took him to make the notes in the first place, perhaps longer. If he reorganizes them he will spend still more time on them. A student of average ability can readily organize the material of a lecture into acceptable notes while he is listening to the lecture. On first thought it may seem advantageous to preserve everything which the lecturer says. If the student were to do this, however, in preparing for a test or examination later, he would find himself confronted with the necessity of reading through the entire series of lectures, which would manifestly take too much time. If his notes have been made carefully in the first instance and really represent his own

reactions to the lecturer's material, he will find that he has saved time and effort when preparation for a test or examination is to be made.

Finally, there are some students who consider it unnecessary to make notes of any kind. They insist that they prefer to devote their entire attention to thinking about what the lecturer has to say or what the writer has to tell. For a certain few students who have an analytical type of mind this method may be desirable. Those students who have the photographic type of mind which retains everything by which it is stimulated will likewise find very little need for making notes. But the large majority of students do not belong to either of these types and, therefore, the better way in a lecture or in a reading assignment is to select the essential ideas, make such notes as will represent one's own reactions to those ideas, put them into permanent form, and file them away.

SOME GENERAL SUGGESTIONS ON THE ORGANIZATION OF THE NOTEBOOK

After a student has purchased a standard notebook and paper, he should, by means of dividers, set aside a section of it for each of his school subjects. Each of his activities that fall outside of regular class work ought also to be given allotted space. Every section should be properly labeled and the student should make it a point to include in each section only such things as belong there. A practice to be condemned is that of making drawings and of writing notes and verses on or around the notes which one makes on lectures or on reading. Some artists tell us that their first practice in drawing came during the odd moments in their classes and in the library. If the student finds lectures uninteresting or if he has no mood for reading or study, he may better turn to a section of his notebook which he reserves for artistic effort and occupy himself there. His note material on any regular class subject should represent accuracy, neatness, and unity.

In order to make sure that notes do not become misplaced, the student should indicate on each leaf of notes, to what subject the material belongs. A good practice is to place a headline at the top of each leaf. If, for example, he is taking a course in history, let us say History 100, this ought to appear in the headline at the top of every leaf of notes on that subject. In addition to the name of the course in which the notes are made, it may be desirable to give the number of the page in the series, and the topic. Thus, if the student were making the third page of notes on a lecture in History 100, and specifically on the Reconstruction Period, the following headline at the top of the leaf of his notes on this lecture would help to keep it in place:

Page 3— History 100— Reconstruction Period

THE LECTURE METHOD: ITS ADVANTAGES AND WEAKNESSES

Since success in making notes on lectures depends much upon an understanding of the lecture method we shall preface our suggestions on making notes on lectures with a discussion of the advantages and weaknesses of the lecture method and of the duties of the lecturer and of the listener.

Much has been written recently about the comparative value of the lecture method and the recitation method in college classes. There are arguments for and against either one if it is used to the exclusion of the other. There is some danger that in following the lecture method, the lecturer will tend to do most of the work and the student will fail to make desirable reactions. If the lecturer does not have something worth while to say or if he fails to say it in an interesting way, there will naturally be a minimum of response. In the recitation method, on the other hand, the student is constantly confronted with the necessity of making reactions. This need keeps him alert at least, although alertness is not necessarily a guarantee of interest. On the contrary, he may simulate an interest by attempting to convince his teacher that he understands what is going on without really learning much. Probably the best method of instruction in college is a combination of the two methods.

One strong feature of the lecture method is the fact that much time is saved for the student since an instructor may give him in a few lecture periods, a well-organized unit of knowledge which would take him weeks and even months to find and to organize. The saving of time is an important consideration in college work. It is true that the acts of searching for information and of organizing it have great value, but there is danger constantly that students will waste much time while hunting for desired information and even more in organizing it.

A second advantage of the lecture method is that the student is given the very latest information on the subject being discussed. The subject matter of many college courses is changing constantly. The student who depends on textbooks in certain college subjects will find his information already, partially or wholly, out of date. One of the primary duties of the college instructor is to keep himself informed on the newest developments in his own subject. The ever-changing civilization of which we are a part, necessitates a constant reconstruction of experience in every field of knowledge. Every year sees the discovery of new facts which materially change our insight into the previously known facts and circumstances of human existence. A good lecturer takes cognizance of this ever-changing condition in human experience. Since human beings are naturally curious, students will find in this new material a source of added interest.

A third advantage of the lecture method is that the lecturer himself can give an added animation to the course through his personality and through his wide contacts with human experiences. After all, there are many things which can never be committed to a book. While a man's writings reveal his manner of thinking and, to some extent, his individuality, the more subtle elements of his personality can never be discovered by examining his writings. Our modern philosophy of education emphasizes greatly the development of proper attitudes and appreciations in individual human life. These subtle elements in others, these attitudes and appreciations, must on the whole be caught from personal contact. The material of many a course seems dry and uninteresting when it is committed to the printed page, but when it is presented and discussed by an instructor who possesses a forceful and stimulating personality, the dry facts take on life; and the glow of interest which is engendered in the classroom relationship welds the new experience to the student's previous experience in such a fashion that the new becomes his permanent possession through a modification of the old. Much is being done by the modern college in the way of offering courses to students through extension divisions. Undoubtedly these courses have their place but the knowledge gained through them must tend to be of an impersonal, lifeless sort. No device has yet been discovered to take the place of the personal touch which can be found only in the classroom in which there is a student eager to learn, and an instructor equally eager to help him learn.

The method of note-making during lecture periods is conditioned very directly, then, upon the nature of the relationship between the instructor and the student. We have already noted that the *sine qua non* of all learning is interest. The smaller the interest, the smaller the learning; the greater the interest, the greater the learning. Everything —understanding, associating, remembering, reproducing, utilizing—all of these things depend upon the quality and the quantity of interest which is present in any situation in which learning is involved. A common interest constitutes the bond between lecturer and listener. If the lecturer is talking about something in which the listener has no interest and for which he can arouse none, the lecture will be a failure although the subject matter may be of splendid worth. Likewise if the student is interested but the lecture is poorly organized and delivered the lecture will be a failure. It is only when an interested student and an interested lecturer concentrate on an interesting lecture that the highest success will result.

DUTIES OF THE LECTURER

Must present worth while subject matter.

The lecturer, by accepting certain duties and responsibilities, can be of great help to his students in their task of making notes on his lectures. His first duty is to present a unit of human experience which is worthy the consideration of the lecturer himself and of the students before him. It is his second duty to eliminate from his lecture all irrelevant matter and everything which does not materially help the student to understand and to react to the unit of experience which he presents. His third duty is to set forth this unit of worth while human experience in a well organized form. A lecturer may have something of great merit to say, but if it is not said in a way that will compel the student to react correctly to it, the lecture will be a failure. His fourth duty is to observe with care certain structural rules, important among them being clearness, definiteness, truthfulness and accuracy of statement, logical progression of thought, and correct English.

Lecture must be well organized.

A fifth duty of the lecturer is to present his subject in an interesting way. In preparing the material for his lecture he should keep in mind the capacity and degree of advancement of the students who are to make up his audience. From the very outset, he should strive to create a glow of interest in the minds of his students. Having aroused this interest at the beginning, it is the lecturer's duty to maintain it throughout his lecture. If interest lags, he may be certain that his students are not making desirable reactions to what he has to say.

Subject must be made interesting.

A sixth duty of the lecturer is to allow students frequent opportuni-

Should afford students opportunity for reaction.

ties to make oral and written reports on the material which he has presented. The conscientious lecturer checks up on himself as well as on his students. A few questions at the beginning of a period or the call for a short written statement from the student setting forth the salient points of the lecture of the preceding hour, are two ways of determining whether students are reacting as they should.

Duties of the Listener

In order to be an efficient maker of notes on lectures the student must accept certain duties also, for the success of the lecture depends, we have already said, quite as much upon the mental alertness of the student as upon the compelling interest of the instructor. The student's first duty with reference to any lecture, is to come to the lecture with an open mind. We do not mean to imply by the term "open mind" that his mind is to be so open that everything will go in one ear and out of the other, nor does it mean that he is not to come to the lecture with any preconceived ideas as to what the lecturer is probably going to say. The essential element of the open mind is fairness. The student should come with a sympathetic willingness to hear fairly whatever is said, saying to himself that he will listen with eagerness, weigh the statements of the instructor with justice and then accept or reject what has been said. Virtually every lecture contains some good things. At the same time no lecture has yet been devised which is all equally valuable. It becomes the student's duty then to sort out the convincing from the unconvincing elements in a lecture. This willingness to give just consideration to all the material presented should result in the acceptance of that which seems to him worth while, and in the rejection of that which, in his sound and fair judgment, is not in harmony with his best thinking.

The listener's second duty is to be mentally active throughout the lecture. The student must be a close listener, and to be a close listener he must refuse to give attention to outside distractions, to the noises in the room, and to mannerisms of the instructor. He must guard also against permitting certain things which may be said or done to lead him into side-tracks of thought commonly referred to as daydreaming. The close listener must be constantly alert. His whole attention must be riveted upon what is said and done by the lecturer. This does not imply that he is not to make comparisons of the statements made or the activities engaged in with his previous experiences, nor does it mean that he is to fail to pass judgment on what he hears. Making conscious reactions through notes to what is said or done is the very best guarantee against these various dangers.

A third duty of the listener is to try to discover the skeleton of the lecture. Every carefully prepared lecture will represent an organized unit of human experience. The inexperienced listener needs to learn that after all a lecturer cannot say many important things in the course of a single class period. Since the material which he presents will of necessity be, for the most part, new to the listener, he has time only for the presentation of a few highly important facts. The larger part of his time he will spend in explaining and illustrating these specially important points. This necessity makes it possible for the listener to spend much of his time watching for the main divisions of the lecture.

A student may be helped in his efforts to discover the plan of a lecture by watching for one or more of the following sign-posts which often indicate its general trend: (*a*) Sometimes the wording of the announced subject or title of the lecture reveals to the student its general plan. This is particularly true in college classes where the instructor is anxious to fix an association in the mind of the student between the general outline of the course and the subject matter of any one particular lecture. (*b*) Sometimes lecturers place an outline of the lecture on the blackboard or they indicate in an introductory paragraph the line of thought that they intend to follow. (*c*) Most lecturers divide their material into a relatively small number of large divisions, usually from three to six in number. Sometimes these divisions are specifically indicated by such introductory words and phrases as "First," "Second," etc., "In the first place," "In the second place," "Then," "Furthermore," "On the one hand," "On the other hand," "Again," and so on. Some lecturers indicate a change in thought by a change in position or accent or manner. (*d*) Sometimes a lecturer indicates to his listeners the important parts of his discourse by repetition or by emphasis. The student should make it a point to study each instructor and observe both his manner of organizing the material of his lectures and his manner of presenting it.

MAKING NOTES ON LECTURES

We have already stated that the student should always think over what has been said before he makes his notes. After all, the primary purpose of a lecture is to arouse in the student's mind a line of thinking which will result in a modification of his existing mental associations or in the building of new ones. It is at this point that the student's manner of making notes becomes significant. If he writes down verbatim the statements of the lecturer it is probable that he has not taken time to think over or think through carefully what the lecturer says. The good note-maker listens, compares, and decides; and having made his own mental estimate he formulates it in his own way, and then writes it down as his own reaction to what has been said. The importance of complete units of thought becomes apparent. To jot down only a word or two or a mere phrase, or, on the other hand, to attempt to write down all that the lecturer has said, will mean equally unintelligible notes.

The listener should guard against making many notes. A few notes well considered and carefully made, representing the serious thinking of the student, will prove much more valuable than many notes which have not been thought through. This suggestion brings with it another, which is that he should write his notes in permanent form during the lecture to which they belong. Much has been said in favor of revising or rewriting notes after the lecture is over. Some educators claim that rewriting notes helps to fix in mind the facts presented in the lecture. They insist that it is impossible to make notes neatly during the class hour and that rewriting guarantees greater neatness. They claim too that the student, frequently failing to organize the lecture properly during the period, discovers at the end of the lecture that his outline, already in permanent form, needs to be revised. Some say that notes should be rewritten on a typewriter, claiming that such a practice has a double advantage—the one, practice in the use of the typewriter, and the other, practice in putting notes in better form. Another frequently mentioned advantage of rewriting notes is the possibility of adding material which occurs to the student after the lecture.[1]

There are, however, serious objections to revising or rewriting lecture notes. If the student intends to rewrite his notes after the lecture period, he is very likely to write careless ones during the class period. He excuses himself constantly by the promise of later revision. But it is probably safe to say that most of the notes which are written in class with the promise of revision, never are revised. The result is that the student finds himself in possession of a very inadequate set of notes when he needs them. Rewriting, on the whole, is mere copy work which has very little value. The student can use this time to much better advantage by reading additional references on the same subject or by studying his notes in the effort to fix in mind the outline and the facts of the lecture. He will do well to take his class notes to the lecturer occasionally to ask how well he has succeeded in his note-making. The instructor can then indicate whether he thinks it worth while for the student to rewrite them.

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[1] C. C. Crawford, *Methods of Study*, p. 85.

MAKING NOTES ON READING

The good reader alertly reacts to what he reads as well as to what his instructors may say in their lectures. He does not look upon himself as a blotter to drink up information nor as a sponge to soak up knowledge. On the contrary, he considers himself an active contributor, who weighs and considers what he reads and then makes notes which facilitate interpretation, serve as an aid in reviews and examinations, and heighten his appreciation of worthy reading matter. In a previous chapter we suggested several kinds of secondary reactions or notes, which the student may make to his reading. We shall now show how notes on one's reading are to be made.

The most common kinds of reading notes made in the book as one reads are (1) marking, (2) underscoring, and (3) making marginal notations.[1]

1. Marking. The value that such notes may come to have to the one who made them is revealed in the words of Phillips Brooks which were spoken to Edward Bok when the latter admired Brooks's fine library. Brooks said:

> "I am glad you had such respect for my dumb friends [his books]. For they are my friends, each one of them," he continued as he looked fondly at the filled shelves. "Yes, I know them all, and love each for its own sake. Take this little volume," and he picked up a little volume of Shakespeare. "Why, we are the best of friends: we have traveled miles together—all over the world, as a matter of fact. It knows me in all my moods, and responds to each, no matter how irritable I am. Yes, it is pretty badly marked up now, for a fact, isn't it? Black; I never thought of that before that it doesn't make a book look any better to the eye. But it means more to me because of all

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[1] See footnote 2, p. 175.

that penciling. Now, some folks dislike my use of my books in this way. They love their books so much that they think it nothing short of sacrilege to mark up a book. But to me that's like having a child so prettily dressed that you can't romp and play with it. What is the use of a good book, I say, if it is too pretty for use? I like to have my books speak to me, and then I like to talk back to them. Take my Bible here," he continued, as he took up an old and much-worn copy of the Book. "I have a number of copies of the Great Book: one copy I preach from; another I minister from; but this is my own personal copy, and into it I talk and talk. See how I talk," and he opened the Book and showed interleaved pages full of comments in his handwriting. "There's where St. Paul and I had an argument one day. Yes, it was a long argument, and I don't know who won," he added smilingly. "But then no one ever wins in an argument, anyway; do you think so?"[1]

2. Underscoring is usually limited to words and phrases. The following passage lends itself well to underscoring. Note how it brings into relief the important answers to the question implied in the title of the passage "What the Farmer Reads":

> The farmer reads the sky not by the portent of the darkening cloud, but through the notice sent by the weather forecaster. He has learned to rotate his crops, to fertilize his soil, and to spray his orchards by reading farm bulletins and farm papers. The university of print aids him in solving his vocational problems. When he is ready to market his hogs, cattle, or grain, he scans the market quotations in the daily newspaper in order to determine the most favorable time to sell. He reads mail order catalogs when ordering goods; he learns to follow printed directions given for destroying scales on trees, insects in the fields, and for setting up grain binders and hay mowers; and he balances the rations of his dairy cows at the behest of the printed word.[2]

Many well-constructed paragraphs contain a topic or key sentence. In most paragraphs it is the first sentence, in some it is the last, in a few it is hidden away in the middle of the paragraph. The alert reader soon discovers this sentence and either underscores it or indicates its location by making a line beside it on the outer margin of the page.

By examining some of the paragraphs in this chapter the student may see how the key sentence functions and how it is to be underscored. In this paragraph the previous sentence constitutes the key sentence. It has been underscored to show how it is to be done. Similarly the last sentence in a paragraph on page 191 has been underscored to indicate that it is the key sentence of the paragraph. In the paragraph beginning on page 192 and continuing on the following page the student will find the key sentence in the middle of the paragraph on page 193.

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[1] *The Americanization of Edward Bok, An Autobiography,* pp. 48-49.

[2] C. J. Anderson and Isobel Davidson, *Reading Objectives,* p. 2f.

Hall-Quest gives the following warning:

> Although the textbook is to be treated as a tool, this must not mean careless and ugly underscoring. If in the manual training department it is important to keep the tools sharp and clean so as to achieve a fine cabinet or a perfect chair, it is no less imperative that pupils take care of their study tools in other subjects. Neatness should characterize the pupil's work in all branches of his studying. Neatness, orderliness, clearness, are closely related to good studying. This does not imply that one's writing must be perfect or labored, for this to many of us would be a fearful loss of time. What is meant is that underscoring should be done neatly, not with large ugly black lines that follow the course of a mountain path. It probably is better not to use ink for underscoring. It often spreads, and easily blots. The main objection to the use of ink is, however, that it makes revision rather difficult.[1]

3. Marginal notations. Hall-Quest suggests the following five kinds of marginal notes:

> First, the summary of each paragraph. If the pupil is trained to write along the side of each paragraph a brief summary of its main thought, he will save much time in his studying.
>
> Second, references to related material in the same book or elsewhere.
>
> Third, questions on the lessons, questions that arise during the reading of the lesson and that must be jotted down at once lest they vanish.
>
> Fourth, criticisms of the lesson, points of view different from the author's, the pupil's fresh reaction to the subject matter.
>
> Fifth, new thoughts, suggestions, large questions that are destined, perhaps, to stimulate the young man or young woman into serious plans of great living.[2]

Perhaps the most useful of these types of notes is the brief summary of the paragraph written in the margin. The student will find examples of such summaries on pages 193 and 194. He should note how helpful such notes are in reviewing what he has read. By noting the heading of the section on page 193 he knows that the paragraphs which follow purport to give the duties of the lecturer. The summaries in the margin state in a few words each specific duty opposite the passage where it is discussed, and they will tell the student almost at a glance the gist of the passage.

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[1] A. Hall-Quest, *Supervised Study*. Copyright 1917 by The Macmillan Company. Reprinted by permission. P. 167.

[2] *Ibid.*, p. 170.

In addition to the foregoing kinds of notes which may be made in a book as one reads, there are several kinds of notes which are made about one's reading on notebook paper.

4. Copying the key sentence which contains the gist of a paragraph, or copying key passages from a chapter or an article is another commendable type of reading-notes. Whenever this method is used the note-maker must be particularly careful to observe the three following rules:

a. Make a clear heading consisting of the subject under consideration, the name of the author from whom the key sentences are taken, the name of the publication, and the page or pages on which the material quoted may be found. An example of the heading for a book reference to appear on each leaf of notes follows:

Note-Making—H. D. Kitson, *How To Use Your Mind.* J. B. Lippincott Company, 1926, pp. 40-41.

Similarly, an example of the heading for a magazine reference, giving both the name of the magazine and the volume, follows:

Effect of a Course on How to Study; W. F. Book, "Results obtained in a Special 'How to Study' Course Given to College Students." *School and Society,* XXVI: 529f. (October 22, 1927.)

b. Enclose all direct quotations in quotation marks. The purpose of quotation marks is to indicate to the student that the material is quoted and therefore not original with himself. Due credit should always be given for borrowed material, unless the quotation is universally familiar to educated people.

c. Be accurate in copying your quotations. Every word and every punctuation mark must be given exactly as it is found in the original source.

5. Another type of reading-notes somewhat similar to 4, is based on the practice of selecting a few sentences which represent the gist of a chapter or an article. An objection to this type is that students are inclined not to stop there. They may fail to distinguish between important and unimportant sentences. Many students develop the habit of copying too extensively. Kitson condemns the practice of those students who read a single sentence at a time and copy it down on the

assumption that they are playing safe in this way. A serious objection to this practice is that it interrupts continuity of thought.[1] An even greater objection to this practice is that it may so easily develop into mere copying which does not represent genuine thinking on the part of the reader.

6. Still another type of reading-notes is the outline. Hall-Quest does not believe that the pupil's outline should always coincide with that of the author. He says:

> It must be his own outline of the author's discussion, and reflect his own understanding of the problem. To be sure, much of the outline will reproduce the author's arrangement of the material; but it is important that the pupil react with his own conception and interpretation. . . . Viewed from this angle, outlines are more than bare skeletons of the lesson. . . . The term includes something finer and more difficult than mere listing of points haphazardly selected from each paragraph. The outline is a reconstruction of the author's material as the pupil sees it. It must be the pupil's own analysis.[2]

The outline demands the same carefully arranged headings as do those notes which quote topic sentences. The heading should be placed on every leaf of outlined notes. The outline has been standardized sufficiently so that we may recommend a definite arrangement. Hall-Quest gives the following suggestions for the major divisions of an outline:

(*a*) They should be expressed in the form of nouns, noun-phrases, or complete sentences.

(*b*) When related they should be expressed in parallel form.

(*c*) They should be brief but clear.

(*d*) They should be so worded that the most important element is emphasized.

He gives the following suggestions for the mechanical framework of the outline:

(*a*) Divisions of coördinate value should always be the same distance from the left-hand margin.

(*b*) Subordinate headings should be indented under the division to which they are subordinate.

(*c*) When divisions or notes run over one line, the second line should begin either level with the first word of the preceding line or else should be indented.

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[1] H. D. Kitson, *How to Use Your Mind*, p. 36.

[2] A. Hall-Quest, *Supervised Study*. Copyright 1917 by The Macmillan Company. Reprinted by permission. Pp. 178-179.

(*d*) Avoid extreme subdivisions.

(*e*) The marks usually used to indicate divisions and subdivisions are Roman numerals (I, II, etc.), Arabic numerals (1, 2, 3, etc.), capitals (A, B, C, etc.), small letters (*a*, *b*, *c*, etc.), and numbers or letters in parentheses [(1), (2), (3), etc.].[1]

The following outline of the first four pages of this chapter, in which the above suggestions are embodied, will serve as a model.

Making Notes—O. H. Werner, *Every College Student's Problems*. Silver, Burdett and Company, 1929. Chapter IX: "Making Notes."

I. Introduction.
    1. Note-making an active process.
    2. Making notes versus taking notes.

II. Values of making notes.
    1. Development of keenness of judgment.
    2. Preservation of reactions in permanent form.
    3. Provision of material for directing work of each day.

III. Objectionable ways of making notes.
    1. Writing too much.
    2. Making notes on loose scraps of paper.
    3. Writing notes in shorthand.

IV. General suggestions on the organization of the notebook.
    1. Use a standard notebook.
    2. Set aside a definite portion for each school subject.
    3. Be neat and accurate.
    4. Label notes.

7. Another and last type of reading-notes is the summary. An excellent way for the student to react to his reading is to read through an entire paragraph or chapter, then close the book, and reproduce what he has read in his own words. Crawford says:

> Boiling down ideas to a few words is a practical test of your understanding of the material. You cannot say in a few words what you do not know and thoroughly understand. It is a very thoughtful type of study. . . . Relationships are more closely seen when the skeleton is divested of unimportant detail. The labor of writing is reduced if the

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[1] Hall-Quest, *op. cit.*, p. 179f.

thought is in condensed form. You should strive, therefore, in taking notes to achieve as great condensation as is consistent with clearness.[1]

The summary constitutes one of the highest types of note-making. It forces the reader to ask himself constantly, What am I looking for in this chapter, this article, or this book? What new ideas does the writer present that I should accept? Am I certain that I understand what this writer intends to tell me? And after the reader has completed his reading, to summarize what he has read is to guarantee that he has thought through and has thought over his reading; in short, it asks him to put into his own words what he has really made his own.

In making a summary the note-maker should use headings like those suggested for notes made up of quotations of topic sentences.[2] The chief difference between quotations and summaries is that the former are exact reproductions of what someone else has said; the latter are the reader's own reactions to what someone else has said. A summary should be accompanied by additional comments by the reader. He should ask himself, Does my experience verify or disprove what I read? Do I agree or disagree with the viewpoint of the writer? In what ways may this material be helpful to me in the future? The answers to such questions should be written out and attached to the summaries. Such summaries and comments, if carefully made, constitute the most valuable type of notes.

If the student were asked to make a summary of the first paragraph of this chapter it might run as follows: The making of notes represents intense mental activity and not mere passive reception. A summary of the second paragraph might run: Making notes is superior to taking notes because notes that are made represent the student's own thinking, while those that are taken do not. An example of a summary of a chapter may be found at the end of this chapter.

MAKING NOTES ON LABORATORY EXPERIMENTS

Since laboratory exercises in the various sciences differ greatly it is difficult to suggest a form which would be acceptable to every instructor. Usually a laboratory instructor gives directions as to what he expects his students to do. Twiss suggests that the notes made by the student on his experiments should contain

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[1] C. C. Crawford, *Methods of Study*, p. 80.

[2] See p. 200, 4 *a*.

. . . (*a*) a full and clear, but concise, statement of the problem that is to be solved or the question that is to be answered by the experiment, (*b*) a brief description of the apparatus and materials used, (*c*) an explanation of the methods of procedure, (*d*) a clearly tabulated statement of numerical data and results, (*e*) all the calculations that were used in obtaining the results, (*f*) the conclusions that were reached, (*g*) a brief discussion of such sources of error as are profitable for the student to consider. The students should be required to express themselves by drawings and graphs wherever such modes of description are obviously of service. . . . Notes of the best sort tell a straightforward story in the student's own language about what he wanted to find out, how he went about it, the steps by means of which he reached his answer, and what the answer was.[1]

Making Notes on Other Experience

Note-making should include more than that which covers a student's lectures, reading, and laboratory work. Modern education emphasizes the need of harmonizing activities in school with activities outside of school. An outgrowth of this emphasis has been the extension of educational activity into all phases of life, not limiting it to the school room. Field trips, excursions, and extension courses are a few examples of the newer educational activity. The modern college student must be prepared to engage in a wide range of college and extra-college activities. This larger experience makes it desirable for him to make notes recording the essential features of his new experiences. For example, he may want to know how to make notes for a talk which he is asked to give in public. He should jot down stories and illustrated points on 3 x 5 cards and file them for future use. If he is frequently called upon for talks he should use spare moments to organize materials around suggested topics. Ideas for future talks may sometimes come from a speaker to whom he is listening; these ideas and matter related to them should be jotted down as completely as possible and then filed.

Some people make notes on their experiences outside of school work in order to be able to relive the experience at a later date without the active effort of memory. Frequently we hear people say, "How I wish I had written that down." The commonest form of this type of notes is the diary. The world owes much to the diaries of certain men and women. In fact, there are many noteworthy events about which we would know little were it not for the carefully kept diaries of men who lived through them. The diary represents notes on an individual's own life, with his reactions to events and personalities. Organizations also keep a record of their activities, this record being referred to as "minutes." Minutes consist of notes on the transactions of business at meetings. A capable secretary can make notes invaluable to an organization and sometimes to a whole state or nation, as in the case of the records of a legislature or of Congress.

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[1] G. R. Twiss, *Principles of Science Teaching*. Copyright 1917 by The Macmillan Company. Reprinted by permission. P. 133f.

USE OF NOTES

The chief function of note-making is to help one crystallize the reactions which he makes to his work, to lectures, to reading, to laboratory work, and to experience generally. Headley says: "Notes are chiefly used while they are being made. A note is seldom more clear when reviewed than when written."[1]

Notes should be reviewed shortly after they have been made, thus insuring desirable repetition. They should be reviewed also just before going to class, thus fixing in mind the knowledge of the last step which is so necessary in understanding a lecture in a series. If the student is about to resume making notes on assigned reading, he should review his notes leading up to that point. This will aid him in understanding the reading on which notes are to be made.

The advisability of expanding lecture notes is debatable. There are some who argue that the best a student can hope to do during the lecture hour is to grasp the bare outline. Therefore as soon as possible after the lecture is over, the student should fill in the outline with the details which he will recall from the lecture. Undoubtedly this practice greatly helps the student to fix in mind not only the general outline of the lecture, but its details as well. There is some question, however, as to whether the details of a lecture are worth such intensive treatment. If the student remembers clearly the four or five outstanding points made in the lecture, he will not only retain what is most valuable, but he will be likely also to remember enough of the details. By emphasizing the details, he may overlook the more insignificant points of the outline. It is also doubtful whether this practice is worth the time and effort which it involves.

In a course carefully conducted, there are frequent opportunities to demonstrate one's mastery of the subject matter through tests and examinations. The student, however, should not wait for such spurs as these to review his notes. The best practice is to devote a few minutes daily to a review not only of the notes of the last lecture, but of the entire course to date. Such a review will help the student to perceive the relationship of the parts of the course, and its progressive continuity.

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[1] L. A. Headley, *How to Study in College*, p. 320.

Filing of Notes

The modern world utilizes files of all kinds for the orderly arrangement of data and information both for ready reference and for future use. The commonly used card files accommodate cards 3 x 5 and 4 x 6 inches in size. Such files are particularly useful for filing references and short topics for ready reference. Notes made on notebook paper should be filed in manila folders, 10 x 12 inches in size. These folders should be properly labeled and filed alphabetically. A good filing cabinet together with the necessary cards and folders may be purchased at a comparatively small cost. The efficiency of the student will be greatly increased by the use of such filing equipment, and he will have laid the foundation for a filing system which can be expanded indefinitely and which can be used in every vocation. If the student cannot afford to buy such a cabinet, he may file away the folders in a box thirteen inches wide and one and a half or two feet in length. The cards may be filed in a shoe box.

Summary

Good note-making demands intense mental activity. The note-maker must participate actively in the lecture, the reading, the laboratory exercise, or other college or life experience. His notes should represent what he himself believes of what he hears or sees. We make notes in order to develop keenness of judgment in selecting the worth while in what we hear and see, to preserve permanently our reactions in college work, to aid us in reviews for tests and examinations, to direct the work of each day, and to serve us in later college years and even in years after college is over.

It is objectionable either to make too voluminous or too brief notes; and those made on loose scraps of paper are to be especially condemned. Shorthand notes are objectionable, too, chiefly because too much attention has to be given to taking them during the lecture, and because too much time is needed afterwards to transcribe the notes on the typewriter. The most objectionable practice of all is not to make any notes.

The success of a lecture depends upon the attention which an interested lecturer and an interested student give to an interesting lecture. Both the lecturer and the listener have certain duties. The lecturer must present a unit of human experience in a well-organized form, and in such a way that the listener will make constant reaction to what he hears. The listener must come to the lecture with an open mind, the essential characteristic of which is sympathy. He must be mentally active throughout, refusing to be distracted by irrelevant happenings or to go daydreaming. His notes must set down the outlines of the lecture, thus representing its main features.

Notes made while reading may consist of marking, underscoring, or marginal notations all made in the book. The location of topic sentences as well as the copying of pertinent sentences are other desirable reactions to reading. Outlining, summarizing or *précis* writing are all excellent practices.

Laboratory notes should be made in accordance with the directions of instructors. The student should make notes on experiences outside of college as well as on those within. He should remember, too, that probably he will be called upon to make speeches. A portion of his notes should represent reactions here and there which he can use for this purpose. After notes have served their immediate purpose in a course they should be filed properly.

Questions

1. Why is the term "note-making" preferable to the term "note-taking"? How does your answer justify the assertion that "making" notes is an active process?
2. For what purposes are notes made?
3. Name some objectionable ways of making notes and show why they are objectionable.
4. How should a notebook be kept?
5. What advantages are claimed for the lecture method?
6. In regard to the lecture, what are the duties of the lecturer? Of the listener?
7. How may the listener discover the divisions of the lecture?
8. Name four types of reading notes and tell how each one should be made.

9. How should laboratory notes be made? How should notes on experience outside of regular college work be made?
10. How may notes be used? How should they be filed?

EXERCISES

1. Ask a public speaker to explain his system of making notes.
2. What advantage or objection do you see in double entry notes? (Sel. Ref. 4, p. 346ff.) What advantage or objection is there in rewriting lecture notes?
3. What is meant by the expression "notes are used, and best used, while they are being made"? (Sel. Ref. 4, p. 342.)
4. Outline one of your supplementary readings, preferably Sel. Ref. 1, 3, 5 or 7.
5. Make a summary of one of the following: the value of notes (Sel. Ref. 2); desirable qualities of notes (Sel. Ref. 4); objections to copying (Sel. Ref. 9).
6. Make an outline of a lecture delivered by one of your instructors, or a sermon, or an address by some speaker outside of the college.
7. Visit a stationer's shop and examine the various filing devices. Also visit the office of a department store and ask to see the filing devices in use there. Make a list of the devices which are used.
8. Make a list of habits which a student should develop in making, using, and filing notes.
9. What is the difference between an outline and a synopsis? Make a synopsis of Thomas' discussion of those two terms. (Sel Ref. 9.)
10. (a) Make an outline of this chapter. (b) Write a summary of the section on "How to file notes."

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CHAPTER X

FIXING BEHAVIOR

Santayana says that "the intelligent man known to history flourishes within a dullard and holds a lunatic at leash." Plato once said that "man, if he enjoys a right education and a happy endowment becomes the most divine and civilized of all living beings; but he is the most savage of all the products of the earth if he is inadequately and improperly trained." James declares that "habit is the enormous fly-wheel of society, its most precious conservative agent. It alone is what keeps us all within the bounds of ordinance, and saves the children of fortune from the envious uprisings of the poor."[1] These statements reveal the importance of training, or as we shall call it, the fixing of behavior.

THE NATURE OF BEHAVIOR

In a previous chapter we showed that all of our activities may be designated as reactions, as ways of behaving, or simply as behavior. We indicated, too, that some forms of behavior are largely fixed at birth. The blinking of the eye, the beating of the heart, breathing and digestion, we said, are examples of such behavior. Certain other reactions are fixed much less by inheritance. The urge to collect and hoard, the urge to secure social approval and to avoid social disapproval, are examples of this kind of behavior.

The educative element in these latter forms of behavior lies in the possibility of changing them, particularly in changing them to become more definite and to serve our needs better. For example, all of us inherit a tendency to manipulate things with our hands, but whether this manipulation shall be destructive or constructive in its expression, is determined by our training. Without training we would, perhaps as long as we live, lie flat on our backs, wave our hands and legs, twist our bodies about and be active only vaguely without aim or purpose. But as a result of training we learn to walk, to run, to dance; we may become pianists, violinists, builders of temples and skyscrapers, or the makers of a thousand things. In short, by training we become efficient human beings.

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[1] William James, *Psychology, Briefer Course*, p. 143.

In addition to the possibility of modifying inherited reactions and tendencies to reaction, we possess also possibilities of developing innumerable new reactions during our lifetime. These possibilities are usually referred to as our capacities. A capacity is an inherited faculty to learn. A capacity may lie either in the possibility of modifying an inherited reaction or in the possibility of developing a new reaction. When a capacity has been developed by training we call it an ability. For instance, every normal human being inherits capacity or capacities to speak all of the more than four thousand languages and dialects in use on the earth. The capacity to learn all of them exists in the organism of each one of us but most of us will learn at most only two or three languages. It should be remembered that it is no fault of the organism that we do not learn more languages; the fault lies in our training.

Behavior, then, as an adult exemplifies it, consists of partially fixed inherited reactions, of responses to them which have been modified, and of new forms of behavior which have been developed during his life time. This modification of inherited tendencies and this development of new behavior are what we call learning. Learning, then, is the modification and development of behavior. The efficiency of an individual depends upon the quality of both his modified and his developed reactions, that is, it depends upon his acquired behavior. The difference between the savage and the civilized man is a difference of acquired behavior.

It is our purpose in this chapter to show by what means desirable behavior may be acquired; that is, how learnings which represent modification of inherited reactions on the one hand, and development of capacities into abilities on the other, may be fixed to advantage. Such learnings are usually called habits, memories, or associations.

Relationship of Habit, Memory, and Association

What is the nature of habit? The term "habit" may be used in a broad sense, so as to include all learnings whether physical, mental, or moral. Psychologists tell us that every experience, no matter how ephemeral its nature, leaves some trace in the physical organism. The assumption that the formation of a habit depends purely upon repetition is therefore erroneous. The number of times a connection is made is merely a quantitative matter. Whether the connection is made once or many times, in each case habit formation appears. Further, the assumption that habit formation is limited to physical skills is likewise erroneous. Since every experience—physical, intellectual, and emotional—involves the neural mechanism in some way, it represents habit formation. William James, more than three decades ago, gave expression to a similar opinion. He said:

> We are spinning our own fates, good or evil, and never to be undone. Every smallest stroke of virtue or of vice leaves its never so little scar. The drunken Rip Van Winkle, in Jefferson's play, excuses himself for every fresh dereliction by saying, "I won't count this time." Well! He may not count it, and a kind Heaven may not count it; but it is being counted none the less. Down among his nerve-cells and fibres the molecules are counting it, registering and storing it up to be used against him when the next temptation comes. Nothing we ever do is, in strict scientific literalness, wiped out.[1]

Physiologically all learnings are similar. They utilize the neural-muscular-glandular mechanism, modifying inherited modes of behavior and turning capacities into abilities. The number of times a reaction occurs may determine the stability of the learning, that is, its lasting quality, but whether the way of behaving is exercised once or many times fixation, or habit formation, takes place. To think of habit, memory, association, and reasoning as distinct types of learning, each of which must be fixed in a different way, will not only lead to endless confusion but will not represent the truth. All learning exemplifies habit formation. On this point psychologists are agreed. Whether the human organism is learning to adapt itself to a new environment, the adaptation being largely or totally an unconscious process to the individual; whether the individual learns to use the typewriter with conscious effort, to add, or to repeat a poem; whether he learns to associate the facts in "Columbus discovered America in 1492," or to reason his way out of a complexity—in every case the habit-forming process occurs. Dewey shows that habit formation plays an important rôle even in the highest forms of selective reasoning.[2]

Now let us turn our attention to memory. If James is right in saying that "nothing we ever do is, in strict scientific literalness, wiped out," and Lockwood in asserting that "if we learn in the right way, our nervous system will remember of its own accord," we must admit that the organism remembers what it experiences. The remembrance may not be conscious, but the organism remembers nevertheless. If we find that the second time we perform an act it is more easily done than the first time, it is clear that something was remembered. Strictly speaking, at the moment when the act of learning takes place the act of memorizing takes place as well. Chapman and Counts exemplify this viewpoint when they say:

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[1] William James, *op. cit.*, p. 150.

[2] John Dewey, *How We Think*, Chapter I.

> Habit formation clearly bears an intimate relation to memory; for the latter is merely a name for the phenomenon which reveals itself when an acquired group of connections, which has been idle, manifests itself at a later time. In spite of many attempts to differentiate between these two types of activity, no useful purpose will be served by stressing the distinction. Emphasis should rather be laid on the close similarity, if not the identity, of the two processes.[1]

Gates, too, denies that

> . . . the mind as a whole or . . . attention, memory and other operations are general powers or faculties. These words are used merely as terms under which to explain a group of more or less closely related facts concerning human behavior. The facts described under these terms are aspects of the total activity of the organism.[2]

According to this viewpoint memory is a term which describes one aspect, while habit is another term to describe another aspect of the same thing, a way of behaving. Take the ability to typewrite as an example. Suppose that I have practiced for many days and I can now typewrite a letter with ease. I have learned to typewrite. The general ability to typewrite has, in my own case, become a habit. The specific processes which had to be learned by me before I could acquire the general ability to typewrite are all habits also. My proficiency as a typist is largely determined by the degree to which these processes are automatic. Habit, then, refers to the degree of automatism which any reaction represents. If there is little automatism, we say that the habit is weak, if there is much automatism, the habit is strong. But in every case habit is present.

How is memory involved in typewriting? Memory refers particularly to the *time* element in my learning. The test of memory is to see whether I can do now what I could do at some time in the past. If I could typewrite a letter yesterday and I can still do it today, I say that I have remembered how to typewrite a letter. If I could work the shift well yesterday and I can still do it today I have remembered how to work the shift.

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[1] Chapman and Counts, *Principles of Education,* p. 18.

[2] A. I. Gates, *Elementary Psychology*. Copyright 1928 by The Macmillan Company. Reprinted by permission. P. 516.

Both memory and habit are used to describe the same thing, a way of behaving—in this case the ability to typewrite a letter. But they describe two different aspects of this way of behaving. Habit describes the degree to which an act is automatic, the strength of the ability as it exists at any one moment of time, while memory describes the persistency of the ability from one time to another time.

From a physiological viewpoint we are justified in using the terms habit and memory in this way. Psychologists are inclined, however, to restrict the use of the term memory to ideational learning, that is, learning which is mental and deals with ideas. Carr does this when he says that "the purposeful repetition of material in order to ensure its ideational recall on a subsequent occasion is termed memorizing."[1] Freeman says that to remember something means that we are definitely conscious of the fact that part of our experience is derived from what we have experienced before. In the restricted sense, he defines memory as living over again previous experiences and placing them more or less definitely in our past life. In the broader sense he defines memory as the correct reproduction of previously formed associations, whether they are associations between ideas or between stimuli and movements.[2]

James refers to such memory of mental things as "secondary memory," because it is "the knowledge of a former state of mind after it has already once dropped from consciousness; or rather it is the knowledge of an event, or fact, of which meantime we have not been thinking, with the additional consciousness that we have thought or experienced it before."[3] Woodworth says that memory, on analysis, breaks up into several subordinate activities; (1) how to commit to memory, that is, memorizing or learning; (2) how to recover a fact or an event when we want it, that is, recall; and (3) how to perceive that what we now recover is really what we formerly committed to memory, that is, recognition.[1]

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[1] H. A. Carr, *Psychology*, p. 217.

[2] F. N. Freeman, *How Children Learn*, p. 185.

[3] William James, *Psychology, Briefer Course*, p. 287.

Webster's dictionary emphasizes the ideational element in memory. It defines memory as "the mental reproduction of impressions of thought previously entertained and the recognition of them as belonging to previous experience," and says that psychologists discriminate in memory between a process of reproduction and a process of recognition. We may safely say, then, that psychologists generally admit that the time element is present in all learning but they are inclined to limit the use of the term "memory" to ideational behavior, hence, to mental reactions in which conscious recall and recognition are two important elements.

Psychologists have also been inclined to restrict the use of the term "association" to ideational learning. Freeman defines association as the "process by which one idea calls up another. Ideas may be associated because they have been associated in the past, or because they have some logical relation." Memorizing, he says, consists in forming associations, so that at some later time we may reproduce the same ideas in the same sequence in which they originally existed. While memorizing consists in the formation of associations, recall consists in the reproduction of an idea through its association with another.[2] This indicates how closely memorizing and association are related.

James says:

> There is no other elementary causal law of association than the law of neural habit. All the materials of our thought are due to the way in which one elementary process of the cerebral hemispheres tends to excite whatever other elementary process it may have excited at any former time.[3]

Apparently then, the term "association" describes a third aspect of learning. Let us consider what is involved in the act of stating from memory the familiar fact, "Columbus discovered America in 1492." The ability to make this statement represents a number of habits; besides the mechanical habits of pronunciation, enunciation, articulation and breathing, it represents the mental habits of giving words and numbers in proper order, recognizing the meaning of the sentence as a whole, and so on. To be able to recall and recognize this statement as the proper fact in response to a present need is referred to as memory, or rather as memories; memories of the statement as a whole, and also of the individual facts of which the statement is made up—"Columbus," "discovered," "America," "1492." Association is exemplified in the proper relationship of the elements "Columbus," "discovered," "America," "in 1492." If we refer to the example of one's ability to typewrite a letter, we find that the term association describes the relationship between the specific habits or memories involved and one's ability as a whole. Association is exemplified in the correct order of the letters in words, of words in sentences, of sentences in paragraphs, and of the parts of the letter.

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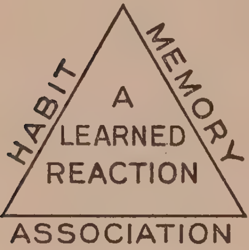
[1] R. S. Woodworth, *Psychology,* p. 332.

[2] F. N. Freeman, *How Children Learn,* p. 188f.

[3] William James, *Psychology, Briefer Course,* p. 256.



The three terms "habit," "memory," and "association" then represent three aspects of the same thing, a learned reaction, that is, a learned mode of behavior. We may illustrate this fact by a triangle. The triangle as a whole represents a learned reaction. One side represents habit, another memory, and the third association. Or we may compare a learned reaction to a river. A river has depth, it has breadth and it has swiftness among other qualities. In a similar way a learned reaction has many qualities, of which habit, memory, and association are three, each representing a different aspect of the same thing.

Laws of Learning

What has been said in preceding paragraphs has presaged the statement that learning takes place only during activity of the organism. Gates says:

> [Learning] is never a passive process of absorption, but on the contrary, a very active process of reacting. Acquisitions of the observational or informational type, such as becoming familiar with a face, tree or building so that we can later recognize or recall it, or memorizing names and dates, the spelling of a word, or acquiring information during reading, like the acquisitions of movements and skills, are the result of reactivities. The same is true of learning to control one's temper, or to appreciate music, art, or literature; all these are acquired

in the process of reacting. In fact, what one learns are reactions; namely, those reactions which, having once been made, are strengthened during further responses.[1]

The secret of efficient fixation of behavior—usually referred to as habit formation, memorizing and association formation—is to make one's activity proceed correctly. If we learn by what we do we must pay much attention to what we do.

The scientist in any field makes it his business to discover not only how activity goes on in that field but also whether there is any regularity in the recurrence of activity. The observed regularity of activity or behavior is called a "law." The "law" of gravity, for example, is called a law because always, under certain conditions on the earth, objects heavier than air are attracted to the center of the earth. Psychologists are discovering also that learning exhibits certain regularities under certain conditions, and hence we speak of "laws" of learning. While psychologists have not agreed on the names for these laws, nor even on their nature, virtually all of them agree that behavior functions very much in the manner described in the following paragraphs. We shall discuss three of these laws of learning.

1. The Law of Exercise. The most widely observed fact regarding learning is that, if there is no interference, each act of doing a thing makes that thing increasingly easier to do; and, contrariwise, the act of omitting to do a thing makes it increasingly harder to do. To put it more simply, use strengthens while disuse weakens. That is why the Law of Exercise is also called the Law of Use and Disuse. Gates says that "exercise of any reaction—walking, grasping, crying, laughing, becoming angry, sad, or joyous—other things being equal, tends to make that reaction more prompt, more certain, more easy."[2] Similarly the lack of exercise of any reaction tends to make it less prompt, less certain, and less easy. Pugilists keep up some of their exercises even if no fight is in immediate prospect because they know that not to do so means a loss of skill and strength. We have no difficulty in remembering the names of people with whom we associate constantly, but we forget names readily when we do not use them. James was right in saying that we should "keep the faculty of effort alive by a little gratuitous exercise every day."

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[1] A. I. Gates, *Elementary Psychology*. Copyright 1928 by The Macmillan Company. Reprinted by permission. P. 281.

[2] *Ibid.*, p. 281f.

The language of memorizing emphasizes this element of repetition. Note the words *react, repeat, remember, recite, retain, recall, recognize, recollect, review, reproduce.* All of them begin with the prefix *re* which means *again.* The implication in all of these words is that we do again what we have done before. If the organism, when it is stimulated, does not act in some definite way there is no learning. If it does not *re*-act, learning is not likely to become fixed. As we have said elsewhere, we do not soak up knowledge as sponges soak up water, nor do we drink up information as blotters drink up ink. Knowledge, information, attitudes, ideals, all are ways of behaving and they are learned by the way we behave. In short, we learn by doing. This fact is expressed in the Law of Exercise.

2. The Law of Effect. Undoubtedly the reader noticed in our definition of the Law of Use and Disuse the qualifying clause "if there is no interference." All laws are subject to qualifications. The law of gravity operates if there is no interference. If there is interference some other law operates in its stead. Thus a train of cars will run down hill by the pull of gravity. It may run up hill also if sufficient force is applied to overcome the force of gravity. Here one force or law is displaced by another.

In a like way the Law of Use and Disuse operates if there is no other law to displace it. The Law of Effect implies that an individual tends to repeat and to learn quickly those reactions which are accompanied or followed by a satisfying effect. Contrariwise, the individual tends not to repeat nor to learn quickly those reactions which are accompanied or followed by an annoying effect. The interference with the Law of Exercise is evident in the annoyance which accompanies undesirable responses. For example, I eat green, unripe apples. According to the Law of Use this reaction should make me more eager to eat such apples later. But the unpleasant consequences actually make me less eager. In this case the Law of Effect supersedes the Law of Exercise.

We exemplify the Law of Effect constantly in our practice of attaching praise or blame to the actions of other persons. Our whole philosophy of rewards and penalties in individual and social life attests our recognition of it. Parents rear their children by it and teachers train children through its application. An instance of the manner in which the Law of Effect works is the case of the fond mother who picks up her baby when it cries. Soon the baby cries every time it wants anything, with the result that the baby is spoiled and the mother has a problem on her hands. It is not the baby's fault. The baby reacts entirely in harmony with the Law of Effect. The mother does not realize that by attaching satisfaction to an undesirable response she is spoiling the child.

Why do college students go to the card catalog and the *Reader's Guide* in the library when they are in need of material for their term papers? Because on previous occasions their search for material has been rewarded there. Satisfaction accompanied these responses. Why do they perform faithful and excellent work for some instructors and not for others? Because they have discovered where they can "get by" and where they can not, or they may "like" one instructor and one course and not another. All of our likes and dislikes, our attitudes, our enjoyments and aversions are built up largely through the operation of the Law of Effect. We do certain things because the doing has given or is giving us pleasure. We desist from doing other things because to do them means annoyance and displeasure. That is why Kilpatrick says that "nothing succeeds like success, and, nothing fails like failure."[1]

In fixing behavior then, we must see that desirable responses are attended or followed by satisfaction and success, and contrariwise, we must see that undesirable responses are attended and followed by annoyance and failure. To put it more simply, attach satisfaction to desirable responses and annoyance to undesirable responses. In this way we can make the Law of Effect help us build desirable behavior.

3. The Law of Multiple Response. This law is also called the Law of Trial and Error or Success. It implies that if we do not know the right reaction to a given stimulus or situation, we are inclined to try responses at random until we find the right one. When students who come from small communities where no library facilities are afforded, are sent to the college library for the first time they exemplify the operation of this law. Instead of going directly to the card catalog or to the loan desk, their groping search may lead them to survey the books on the open shelves, or to hunt in the stacks, or to ask their friends where they can find the books they need. This specific instance may be illustrated by the figure on page 220. S represents the situation, that is, the need of securing a certain book at the library; R^1 repre-

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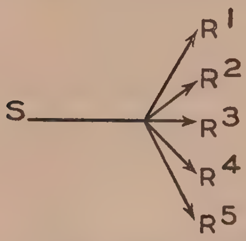
[1] W. H. Kilpatrick, *Foundations of Method*, p. 62.

sents the first response, which is a survey of the books on the open shelves; R² represents the second response, which is an attempt to find the book in the stacks; R³ represents an unsuccessful attempt to gather information from a friend; R⁴ represents an unsuccessful inquiry at the librarian's office; R⁵ represents finally the inquiry at the loan desk which gives him the information he was in search of.



The Law of Multiple Response operates in both our physical and our mental activities. Many human beings of little intelligence are inclined to make their reactions physically merely, and without thought. On the other hand, the individual with normal or with superior intelligence is inclined to "use his head" before allowing his physical reactions full swing. For example, suppose that you have an early morning class. You live some distance from college, and your usual method of going to class is by street car. One morning your watch stops and you arrive at the street corner after your car has gone. The question for you then is, What shall I do about it? There are several things that you may do. For one thing you may hail a passing motor and ask for a ride. You may wait for the next street car which will get you to college too late for your class today. And finally, you may call a taxi. An individual with low intelligence is likely to have only one idea in such a situation, and to act on it impulsively as it suggests itself, without taking time to debate its merits. On the other hand to the individual with high intelligence will come many suggestions as to his next step, and he will weigh with care each suggestion as it comes before he takes action. In other words, he will make his responses mentally before he makes them physically.

These three Laws, the Law of Exercise, the Law of Effect, and the Law of Multiple Response may be said then to be the major laws of learning. They are always borne out in behavior and no student can succeed unless he consciously makes them work for him in his attempt to fix desirable behavior. There are besides these three, certain other laws of learning, that is, observed regularities of behavior, but space does not permit us to discuss them here. They are so numerous and so complex that whole books have been devoted to them. Such college freshmen as later take a course in psychology will there have an opportunity to study them in detail.

The significant thing for every student to remember now is that these three laws of learning can be made to affect our behavior more if we consciously make them work for us. Gates adds the following warning:

> Great difficulty has come from the notion, often accepted in practice if not in thought, that a fact is a fact, and it will function without regard to *the way in which* it is acquired. It is often assumed that if multiplication tables, vocabularies, or names and dates in history are thoroughly learned, it matters little how they are learned. This is completely to disregard the fact that what we learn in these cases is not subject matter but, as elsewhere, particular reactions. We have added to our equipment certain responses which can function only in certain ways—ways determined by the manner of learning. The first principle, especially needing emphasis here, is this: we learn the reactions that we make.[1]

THIRTEEN RULES FOR FIXING BEHAVIOR

In order to live efficiently each individual must observe the laws of learning and enable them to operate to his advantage. The following rules for fixing learnings are widely followed by successful men and women.

1. Provide the conditions which are essential to successful learning. Make sure that you are ready for each undertaking as it comes, that you are physically fit, that you are interested and that your attitude is sympathetic. The provision of these favorable conditions at the outset will go far toward fixing the desired learning.

2. Make sure that the learning which is to be fixed is worth while. Challenge the learning for its probable immediate and future value. Ask yourself, How may I use this learning now and later? How will this learning affect me? Shall I live more successfully for having fixed this learning in my nervous system?

3. Understand as clearly as possible the learning that is to be fixed. The very fact that I understand what I am learning, means that I am already fixing that learning. But if I do not thoroughly understand what I am learning, I cannot be certain that a later stimulation will call forth the desired response. Headley says:

> We understand anything when we get its bearings . . . It means to get under and to get all about a thing until its surroundings have

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[1] A. I. Gates, *Elementary Psychology*. Copyright 1928 by The Macmillan Company. Reprinted by permission. P. 346.

been thoroughly investigated. Understanding is comprehending—literally, seizing together. To understand an object is not merely to grasp it; it is to grasp it in and with its relations.[1]

The process of understanding is clearly a process of making the correct association, of bringing into play previous experiences and of developing new connections. Gates suggests that understanding may be increased by (*a*) verbal description; (*b*) direct observation of good performers; (*c*) pictures—especially motion pictures—graphs, or other mechanical aids.[2]

4. Be sure that you do a thing correctly the first time. In a previous chapter we discussed the importance of a correct start. To receive an incorrect first impression, means that the learner will need to erase that incorrect first impression which has made a start toward becoming fixed, before he can fix a new correct impression or learning. Correct first impressions are especially valuable too because first impressions are frequently more deeply cut than later ones. Myers recently made a study of the influence of errors in arithmetic. He says:

> A mistake is immeasurably serious. Once it is made, we are never sure it will not be made again in just that same way. A wrong answer in number work is apparently just as definite as a right answer. In terms of habit process there is no difference between a wrong answer and a right one. Errors are not negative entities. They are just as positive as correct responses.[3]

We must remember that we learn exactly the reactions which we make.

5. Study your first reactions to detect and to eliminate errors. To fix any specific form of behavior successfully demands that one pay close attention to his first few reactions. Book claims that "in impressing the things to be learned ten minutes of study with attention sharply focused on the things to be fixed in mind are worth more than an hour's repetition when the materials are not attended to intently."[4] Gates says that human learning is superior to animal learning because the human learner "can and does observe more and better the results of his trials and errors; he can and does utilize more and in better ways, ideas developed during observation; he can and does

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[1] L. A. Headley, *How to Study in College*, p. 84.

[2] A. I. Gates, *Elementary Psychology*, p. 345.

[3] Garry C. Myers, *The Prevention and Correction of Errors in Arithmetic*, p. 9.

[4] W. F. Book, *Learning How to Study and Work Effectively*. By permission of Ginn and Company, publishers, 1926, p. 377.

recall these ideas in the absence of the things observed; he can and does observe and profit by the performance of others."[1] The implication of these quotations is that the learner will find it advantageous to study the correctness of the first few reactions in any attempt to fix a form of behavior, instead of repeating the reactions heedlessly. Such attention to early reactions will prevent fixing many forms of behavior incorrectly.

6. Do your learning in the form which is likely to be called for later. This rule will explain in part the success of the "whole" method as compared with the "part" method. In the whole method emphasis is placed on ideas rather than on words. In memorizing a poem, for instance, the learner first reads the poem through meanwhile noting the ideas presented as well as their relationship. A careful rereading follows which attempts to fix the ideas in mind. With the ideas fixed the words of the poem naturally find their proper places. Book says:

> The experimental work on memory that is best known and that has been most often repeated shows that it is from 10 to 30 per cent better to learn such things as a poem by saying the whole poem through from beginning to end over and over rather than to learn it a stanza or a few lines at a time. . . . The chief value of the "whole" as contrasted with the "part" method of memorizing is the fact that in the "whole" method the material is learned as it must be reproduced, and no extra associations need to be formed between one stanza and the next. The "part" method of learning, on the other hand, not only requires extra work but causes several pitfalls to be established for the learner because of the extra linkages that must be formed between the parts that were separately learned.[2]

Gates declares that the reaction should actually be the one later to be desired. He says:

> A fact may be learned in several different ways. The best way is to learn it in exactly the form that will be used later. Consider the situation which life will present and so arrange the circumstances of learning that the learner will be practiced in making those reactions which will be demanded. Do not expect the proper response to appear as the result of incidental training.[3]

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[1] A. I. Gates, *Elementary Psychology*. Copyright 1928 by The Macmillan Company. Reprinted by permission. P. 320.

[2] W. F. Book, *Learning How to Study and Work Effectively*. By permission of Ginn and Company, publishers, 1926, p. 383.

[3] A. I. Gates, *op. cit.*, p. 350f.

7. Do not try to fix too many learnings at the same time. The number of different learnings which can be fixed at any one time will depend somewhat upon the alertness of the individual. The consciousness of certain people is so great that they can remember an amazing number of details about any given experience. Other people exemplify the Biblical statement, "they have ears, but they hear not; eyes have they, but they see not." The number of learnings which an individual should attempt to fix at any one time or over a given period of time will depend also upon the positive value to him of the learnings involved. It is a better plan to learn where to find the information that you may want than to try to store it all away in your own mind. In other words, to know how to use an encyclopedia is far more desirable than to learn all the facts contained therein.

8. Overlearn or give extra practice to all those learnings which you know will be useful in later life. To learn a thing well enough to do it now is one thing; to learn something now and be able to do it in the future is another. By the Law of Exercise constant use of a way of behavior strengthens it, while disuse weakens it. Whenever we anticipate for the future the need of a way of behaving for which there is no demand for persistent and constant use in the present, we require an amount of practice which far outweighs its immediate usefulness to us. This amount of practice which is in excess of immediate need is called *overlearning*. This overlearning is illustrated in the requirement made by many high schools of two years of a foreign language which may not be used again until the pupil reaches college. Undoubtedly this learning of a foreign language would be much more effective if it could be sustained over a continuous period of time. If it is essential to study a foreign language in high school in preparation for college it would be far better to study it the last two years of high school or to take three years. In the same way the spelling of some words must be learned to the point of overlearning because frequently they are not used for long periods of time. Here again it is doubtful wisdom to learn a large number of words which may be seldom used and infrequently met. Spelling experts have recently recommended a much smaller number of words for mastery in the elementary school, these words having been tested for frequency in occurrence in school and in life outside of school. Here again it would be far better for a student to know how to use the dictionary than to know how to spell numerous words which will occur only rarely in

his writing. How much overlearning is required should be determined, then, by (*a*) the ease with which each individual fixes the learnings in a specific subject; (*b*) the probable extent of the periods of disuse; and (*c*) the intensity of the need of the learning, even if it is infrequent.

9. Distribute practice periods wisely. Even under the most satisfactory conditions learning must be repeated frequently in order to make it automatic. The results of experiments indicate that learning periods devoted to any one reaction or subject should not exceed thirty minutes. The optimum length of the practice period varies much with the age, interest and perseverance of the learner. It depends too on the nature of the subject studied. It has been found also that learning is fixed more firmly if periods of rest punctuate the practice periods but in most cases the interval of rest should not exceed twenty-four hours. Reviews have been found to be more effective if they are made at least once each week rather than only once or twice each semester.

10. Make effective associations. Link up every new learning with previous learnings. Note the relationship of the elements in new learnings. James significantly says:

> The more other facts a fact is associated with in the mind, the better possession of it our memory retains . . . The secret of a good memory is thus the secret of forming diverse and multiple associations with every fact we care to retain . . . Of two men with the same outward experiences and the same amount of mere native tenacity, the one who thinks over his experiences most, and weaves them into systematic relations with each other, will be the one with the best memory . . . In a system, every fact is connected with every other by some thought-relation. The consequence is that every fact is retained by the combined suggestive power of all the other facts in the system, and forgetfulness is well-nigh impossible.[1]

For a long time psychologists believed that each individual has one especially strong sense. The terms "eye-minded," "ear-minded," and so on, came into existence through this belief. Recent experiments tend to disprove this idea but they do prove that material learned by an appeal to several senses at once is fixed more firmly than material learned through one sense only. For example, students find it advantageous to write notes on as well as to listen to lectures, and even to repeat to themselves afterwards important points or sentences from them. Some instructors write the significant points of a lecture on the blackboard or give them to their students in printed or multigraphed form. In this way the student may see, hear, write, and even repeat parts of the lecture. This multiform reaction is a good example of proper association to insure effective fixation.

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[1] William James, *Psychology, Briefer Course,* p. 294f.

11. Use your learnings. We have already emphasized the importance of the Law of Exercise. Psychologists disagree about many aspects of the learning process but on this law all are agreed. Use strengthens, disuse weakens. The best known way to fix a learning and to keep it fixed is to use it. The best known way to cause a learning to fade or to permit it to become weak is not to use it. The Law of Exercise, or in other words the Law of Use and Disuse, is fundamental in the psychology of every activity. It operates when the commercial salesman fixes in his mind the names of his customers. It operates when the school pupil fixes in his mind his number facts or when he learns a vocabulary. It operates when he learns to play the piano or the violin. We marvel at the after-dinner speaker who reels off lines of poetry, quotes statements of his contemporaries, and depicts with amazing clearness the pictures in his mind. How does he do it? The answer is, *by use, by practice.*

The hesitancy of many students to take part in class room discussions may be attributed to an ignorance of the Law of Exercise. The commonly used expression that students "visit" classes is unfortunate, for if a student is to master his class work he must do much more than visit a class. He must make active contributions to the class, for learning takes place only during activity. One who is trying to learn to swim does not sit on a bench beside the swimming pool and watch others swim. Instead, he plunges into the water at once and begins, himself, to practice swimming strokes. No authority in history ever sits idly in a fine library admiring the beauty of the books on the shelves. He spends numberless hours reading, selecting, organizing, evaluating—reacting, in short, in multitudes of ways to the material which these books contain. He travels also, and talks to people, and listens to lecturers who know history. The doing of these things *constantly and repeatedly,* are what make him an authority. It is practice that counts, right practice to fix desirable behavior.

12. Attach satisfaction to desirable responses, and annoyance to undesirable responses. In this way we may make the Law of Effect operate in our favor. Many students wonder why they do not succeed well in certain of their activities. This lack of success may be largely due to the fact that they exaggerate their annoyances and undervalue

their satisfactions. When a test paper is returned by an instructor, what is it that a student looks for first? With scarcely an exception it is the grade that is of first interest to him. If the grade is high he is elated; if the grade is low he is discouraged. This is a true exemplification of the natural operation of the Law of Effect. The thorough student, however, makes the law work in his favor even if his grade is low. He may, if he examines his paper with care and has a conference with the instructor about it, actually come to know more about the subject matter which the test covered, than the student who received a high grade. And after all it is the learning that we are most interested in, both in college and out. Marks are a mere means to an end, and we must remember besides that marks are often misleading.

The student should study his reactions both in the case of success and of failure. To study a failure implies that he is seeking the cause of it and that he is willing to remove the cause, tending to turn his failure into success. In searching for the causes of his failures he should study the causes of his successes as well as the probable causes of the success of others. For example, the writer knows a young man who was in constant conflict with his best friends, whose friendship he was in serious danger of losing. This danger greatly disturbed him. He made the discovery one day—a new discovery to him—that every problematic situation may be viewed from more than one standpoint and that it is a characteristic of successful persons that they endeavor to see things through the eyes of other people. He began the practice of seeking to understand the viewpoints of his friends and by so doing he broadened his own outlook to such an extent that he permanently retained the goodwill of his friends.

The operation of the Law of Effect can be made advantageous to us also in college courses which we do not like, or in the cases of instructors or associates for whom we do not care; or in the cases of such college experiences and life experiences as we dislike when we know that we ought to like them. Some students are interested in everything and find no end of enjoyment in practically everything they do. Such students have learned to turn to their advantage the operation of the Law of Effect. Every college course has some interesting aspects, some good points. The business of the student is to find these good points and to attach satisfaction to them. Students should learn to seek the good and the worth while in all the activities of life.

To find them brings satisfaction and success. Success fixes desirable behavior. Fixing desirable behavior means building noble character. Building noble character results in a happy life.

13. Be patient and have confidence. The demonstration of ability to do a thing well when the occasion demands it affords no end of pleasure to the performer. Nothing succeeds like success. Contrariwise, nothing is so disconcerting and fatal to efficiency in behavior as failure. We have already suggested that the student should make the Law of Effect work in his favor. He can do this by exercising patience and by developing confidence in his own ability to do. Rome was not built in a day. Every great achievement demands time and patience. Habits, memories and associations cannot be fixed with one reaction or even with several. We admire the dexterity of the typist, we marvel at the skill of the pianist. We wonder at the lecturer who presents a complicated subject in clearly organized form and expresses it in correct and effective language. What we see is the finished product, the result of long practice. For the moment we forget that what we observe may represent months and even years of patient practice, long periods of application of the rules which we have suggested here. Every student who exercises patience and retains his confidence in his own ability to succeed, will have made a long stride toward success.

Space does not permit us to apply what we have said to many situations. One must suffice.

Let us suppose that you have noticed that most of the meetings of a patriotic nature call for the singing by the audience of "My Country, 'Tis of Thee," and you decide to learn it so that you may be able to join in the singing on such occasions. The favorable conditions recommended in Rules 1 and 2 for Fixing Behavior[1] you have provided: you are interested, you have the right attitude, and you choose a time for learning the song when you feel mentally ready and physically fit. You feel too that this learning is worth fixing, and that its value will be both immediate and permanent. You begin by reading the entire poem to get the thread of thought and the main ideas.

My country, 'tis of thee,
Sweet land of liberty,
Of thee I sing.
Land where my fathers died,

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[1] See p. 221.

Land of the Pilgrims' pride,
From every mountain side
    Let freedom ring!

My native country, thee,
Land of the noble free,
    Thy name I love;
I love thy rocks and rills,
Thy woods and templed hills;
My heart with rapture thrills
    Like that above.

Let music swell the breeze,
And ring from all the trees
    Sweet freedom's song!
Let mortal tongues awake;
Let all that breathe partake;
Let rocks their silence break—
    The sound prolong!

Our fathers' God, to Thee,
Author of liberty,
    To Thee we sing:
Long may our land be bright
With freedom's holy light;
Protect us by Thy might,
    Great God, our King!

Following the directions in Rules 3, 4, and 5, you note that the emphasis in the first stanza is on the glorification of our "land" as the land of freedom. The last two lines introduce the theme of the second stanza, which is an expression of love for our free country's natural beauty as shown in mountains, rocks and rills, woods, and templed hills. The last line in the second stanza suggests the theme of the third stanza, which is a paean in praise of "sweet freedom." To this chorus we summon not only all mortal tongues of all that breathe, but we even call upon the rocks to break their silence. The last stanza is a song of prayer, imploring God to continue His blessings on our free country. Stanza one recognizes the contribution of the past; stanza two extols the natural beauties of our country; stanza three is an attempt to express our rapture in song, while stanza four is a song of prayer, the whole breathing devotion to the spirit of freedom as the guardian spirit of America.

At this point there should come some attention to details. In the first stanza we say, "*Of* thee *I* sing," in the fourth stanza we say, "*To* Thee *we* sing." This difference is likely to cause confusion. It will perhaps help us to note that we sing *of* a country, but *to* a God. The writer has noticed too that many people say, "Land of *thy* Pilgrims' pride," probably influenced to do so by the nearness of "*my* fathers" in the preceding line, the similarity in sound of *my* and *thy* causing the confusion. Such difficult spots need to be particularly noted.

Observing the direction stated in Rule 10, the writer has found a number of associations helpful also in learning the poem. Of the four stanzas the first two begin with "my": "My country," and "My native country." Then, too, the fact that "land" and "love," used so much in the first two stanzas, begin with the letter "l," gives the cue for "Let music swell the breeze," beginning stanza three. The fourth stanza may be called a prayer. The Lord's Prayer begins with "Our Father." The last stanza of "America" begins similarly with "Our Father's God, to Thee."

After some such study as this, to make sure that you understand the poem and that your first impressions will be correct, you should sing the song looking at the words of the poem when it is necessary to do so. You should sing it, according to Rule 6, because that is the use that you will want to make of the poem later. To make sure that the memory of the song will remain it ought to be repeated without the words before you as Rule 8 directs. After this, by refreshing your mind through occasional repetitions in accordance with Rule 11, you will be able to join in the singing of "America" on every occasion, a result which will bear out Rule 12.

If we do our learning in some such way as that suggested here we are likely to agree with Lockwood when he says:

> The sheer, brute work of memorizing does not amount to so much as is commonly supposed. When important subject-matter has been dealt with in some such way as has been suggested in the preceding paragraphs, one's nervous system will remember of its own accord . . . The best way to remember is to be so interested in a thing that one cannot forget it, and to connect it and interconnect it with a thousand other interesting and familiar things.[1]

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[1] F. C. Lockwood, *The Freshman and His College*, p. 57f.

SUMMARY

The difference between the savage and the civilized man is a difference of acquired behavior. The human being inherits an organism which at birth already exhibits certain modes of behavior. Fortunately these modes of behavior may be modified, some much, some little. In addition to these inherited modes of behavior the organism affords the opportunity for developing innumerable reactions during the lifetime of the individual. These are the capacities which by training may be developed into abilities, thus making the individual an intelligent human being.

The modification and development of forms of behavior is called learning. For convenience we describe learnings in terms of habits, memories and associations. It is hazardous to think of these terms as representative of distinct types of learning. On the contrary it is fair to say that they represent three aspects of the same thing, a learned reaction. A habit refers to the degree of automatism of a reaction at any particular time. Memory describes the strength of a reaction now as compared with its strength at some previous time. Association represents the arrangement of the elements which constitute a mode of behavior.

Learning does not just happen. It proceeds by laws just as do all other phenomena on the earth. The three major laws of learning are the Law of Exercise, the Law of Effect and the Law of Multiple Response. Since learning takes place according to law we can fix behavior at least to a considerable extent by applying a number of rules which many men and women have found helpful. The following rules are suggested:

1. Provide the conditions which are essential to successful learning.
2. Make sure that the learning which is to be fixed is worth while.
3. Understand as clearly as possible the learning that is to be fixed.
4. Be sure that you do a thing correctly the first time.
5. Study your first reactions to detect and to eliminate errors.
6. Do your learning in the form which is likely to be called for later.
7. Do not try to fix too many learnings at the same time.
8. Overlearn all those learnings which you know will be useful in later life.
9. Distribute practice periods wisely.

10. Make effective associations.
11. Use your learnings.
12. Attach satisfaction to desirable responses, and annoyance to undesirable responses.
13. Be patient and have confidence.

QUESTIONS

1. What is the nature of human behavior? May all of our activities be explained by your answer?
2. Define learning. Give examples.
3. Define: habit, memory, association. Give examples of each and show how they are related.
4. What is a "law" in science? What is a "law" of learning? Of what value is a knowledge of the laws of learning?
5. Explain the Laws of Exercise, Effect, and Multiple Response. Give examples of each.
6. Make a list of rules which have been found helpful in fixing behavior. Illustrate each rule from your own experience.
7. Discuss the relative advantages of the "whole" method and the "part" method of memorizing.

EXERCISES

1. Try memorizing the following exercises, then arrange them in the order of their greatest difficulty for you, placing the most difficult first.

    (*a*) Is place a going house never up dark spilled floor roughly on higher me looked at.

    (*b*) Sea shell, sea shell,
    Sing me a song, O please!
    A song of ships, and sailor men,
    And parrots, and tropical trees.

    (*c*) ges, lor, rep, nem, sol, tor, cal, gos, hif, les, ner, gis, kon, lan, lel, ruw.

    (*d*) And he, by friar's lantern led,
    Tells how the drudging goblin sweat
    To earn his cream-bowl duly set,
    When in one night, ere glimpse of morn
    His shadowy flail had threshed the corn
    That ten day-labourers could not end.

2. Read what one or more of the psychologists has to say on the nature of behavior. (Sel. Ref. 8.) Summarize your reading and submit it to your instructor for appraisal.

3. Show how you might break the habit of swearing, of drinking, or of being moody or impertinent.
4. Show how you would proceed to develop the habits of politeness; of honesty; of doing your studying at the time scheduled; of getting up promptly; of going to sleep quickly; of reading worth while magazines and books regularly.
5. Tell how one may fix behavior in the following: the words in a German vocabulary exercise; a French poem; the idioms in a Spanish story; the essentials in a lesson on city planning; the fundamental tenets in the organization of the League of Nations; the causes of the Civil War; a poem by Browning; a formula in calculus.
6. How is successful individual or group living dependent upon efficient habits? (Sel. Ref. 2.)
7. List Headley's eight major suggestions for memorizing. How many of them are familiar to you in your work? (Sel. Ref. 4.)
8. Show by an example what Kitson means by impression., retention, recall and recognition in memorizing. (Sel. Ref. 5.)

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CHAPTER XI

THINKING

In the previous chapter we showed how we might encourage the fixing of desirable behavior in ourselves. We saw that both physical, that is to say motor, and mental behavior may be fixed by following definite rules.

When we turn to a consideration of thinking we find that there are some kinds of thinking which should be fixed if we are to make a success of living, but there are other kinds of thinking which cannot very well be fixed; still other kinds ought not to be fixed. Such thinking as recurs frequently in the same form may wisely be fixed. The method of attacking a new problem, defining a problem carefully before attempting to solve it, studying implications of suggested solutions, generalizing one's previous experience—these ways of thinking should assuredly be fixed. A study of day and night dreaming shows that such activities as these cannot well be fixed; and most of the thinking involved in creative imagination certainly ought not to be fixed. Keeping one's mind open to future developments and additional evidence should be fixed and made a habit, but the need of holding our minds ever ready to modify present associations in the light of future developments or additional evidence, shows how flexible our thinking ought to be.

The Nature of Thinking

What is thinking? Webster's Dictionary defines "thinking" as "the exercise of the faculties of judgment, conception, or inference, as distinguished from simple sense perception," and gives as synonyms the following: cogitation, reflection, pondering, contemplation, meditation, musing, imagining, supposing, believing. In defining "thought" this dictionary says that it is "a mental state chiefly characterized by a process of selection; as (*a*) solicitude, anxious care, concern; (*b*) meditation, serious consideration; (*c*) sorrowful thinking, grievous or pensive reflection." The list of synonyms of thought includes the following: idea, conception, imagination, conceit, notion, consideration, meditation, contemplation, deliberation.

Dewey says:

> No words are oftener on our lips than *thinking* and *thought*. So profuse and varied, indeed, is our use of these words that it is not easy to define just what we mean by them . . . (1)* In the first place *thought* is used broadly, not to say loosely. Everything that comes to mind, that "goes through our heads," is called a thought. To think of a thing is just to be conscious of it in any way whatsoever. . . . Daydreaming, building castles in the air, that loose flux of casual and disconnected material that floats through our minds in relaxed moments are, in this random sense, *thinking*. (2) Second, the term is restricted by excluding whatever is directly presented; we think (or think of) only such things as we do not directly see, hear, smell, or taste. We ask the man telling a story if he saw a certain incident happen, and his reply may be, "No, I only thought of it." A note of invention, as distinct from faithful record of observation, is present. Most important in this class are successions of imaginative incidents and episodes which, having a certain coherence, hanging together on a continuous thread, lie between kaleidoscopic flights of fancy and considerations deliberately employed to establish a conclusion. . . . But *they do not aim at knowledge, at belief about facts or in truths;* and thereby they are marked off from reflective thought even when they most resemble it. . . . Then, third, the meaning is further limited to beliefs that rest upon some kind of evidence or testimony. Of this third type, two kinds—or, rather, two degrees—must be discriminated. (3) In some cases, a belief is accepted with slight or almost no attempt to state the grounds that support it. . . . It is marked by *acceptance or rejection of something as reasonably probable or improbable.* . . . When we say, "Men used to think the world was flat," or, "I thought you went by the house," we express belief: something is accepted, held to, acquiesced in, or affirmed. But such thoughts may mean a supposition accepted without reference to its real grounds. . . . Such thoughts grow up unconsciously and without reference to the attainment of correct belief. They are picked up—we know not how. From obscure sources and by unnoticed channels they insinuate themselves into acceptance and become unconsciously a part of our mental furniture. Tradition, instruction, imitation—all of which depend upon authority in some form, or appeal to our own advantage, or fall in with a strong passion—are responsible for them. Such thoughts are prejudices. (4) In other cases, the ground or basis for a belief is deliberately sought and its adequacy to support the belief examined. This process is called reflective thought; it alone is truly educative in value.

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* The figures are inserted to call attention to the four types of thinking.

> . . . To *think* of whales and camels in the clouds is to entertain ourselves with fancies, terminable at our pleasure, which do not lead to any belief in particular. But to think of the world as flat is to ascribe a quality to a real thing as its real property. Men *thought* the world was flat until Columbus *thought* it to be round. The earlier thought was a belief held because men had not the energy or the courage to question what those about them accepted and taught, especially as it was suggested and seemingly confirmed by obvious sensible facts. The thought of Columbus was a *reasoned conclusion*. It marked the close of study into facts, of scrutiny and revision of evidence, of working out the implications of various hypotheses, and of comparing these theoretical results with one another and with known facts. *Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends,* constitutes reflective thought.[1]

Woodworth suggests that the life of man is a

> ". . . voyage of discovery, and at the same time a career of invention. . . . Discovery takes its start with the child's instinctive exploratory activity, and invention with his manipulation, and these two tendencies, perhaps at bottom one, remain closely interlinked throughout. . . . Discovery usually requires exploration, a search for facts; and it requires attention, which amounts to finding the facts or getting them effectively presented; and perception then consists in knowing the presented facts." He differentiates between motor and mental exploration. "Reasoning might be described as mental exploration. The reasoner is an explorer, and the culmination of his explorations is the perception of some fact previously unknown to him. Suppose you need the hammer, and go to the place where it is kept, only to find it gone. Now if you simply look here and there, ransacking the house without any plan, that would be motor exploration. But if you sit down and think, 'Where can that hammer be? Probably where I used it last!' you may recall using it for a certain purpose, in a certain place, go there and find it. You have substituted mental exploration for motor exploration. . . . Reasoning in a way, is a trial and error process. If you don't ransack the house, at least you ransack your memory, in search for facts that will assist you."[2]

Gates says:

> The term thinking is used broadly to include reasoning, creative imagination, recollection, night dreaming, daydreaming, and other forms of reverie. . . . We are dealing with *recalled* facts and experiences in considering thinking. Recall furnishes the raw material or "stuff"

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[1] John Dewey, *How We Think,* p. 1f.

[2] R. S. Woodworth, *Psychology,* pp. 421, 462f.

> with which we think. The first task is to observe the variety of facts that may be recalled and then note the different forms which thought may take when we think or recall facts.[1]

These definitions reveal the nature and extent of thinking. The dictionary says that thought is "a mental state." Dewey says, "Everything that comes to mind, that goes through our heads is called a thought." Woodworth suggests that "reasoning might be described as mental exploration." The distinguishing characteristic of the mental is that it represents ideational behavior.[2] Used broadly, thinking includes all of our mental activities: perception, association, recall, contemplation, deliberation, reflection, reasoning, imagination, and so on. Thinking may therefore be defined as ideational or mental behavior.

KINDS OF THINKING

About a century ago a number of psychologists propounded the theory that the mind is composed of specific faculties, the faculty of reason, the faculty of memory, the faculty of perception, and so on. About this time too the idea was advanced that mental discipline is the function of education. By mental discipline they meant that the faculties of the mind may be and are to be trained by exercise. The faculty of memory for example, could, according to this theory, become powerful by much practice of memorizing, the faculty of perception by much practice in perception. These psychologists had observed that vigorous physical exercise seemed to make strong muscles. By analogy they conceived the idea that severe mental exercise would develop strong mental abilities. The result of this philosophy of education was a search for difficult school and college exercises and the development of a curriculum which aimed to provide stern mental discipline.

We now know that this philosophy of education is erroneous in several respects. The first error lies in the fact that the mind is not composed of separate independent faculties. On the contrary, Gates says:

> Probably in all forms of conscious reactions patterns of neurones radiating through all parts of the brain are involved. The simplest adjustment, such as that to a prick of a pin, engages the whole brain in much the same sense that it engages the whole muscular and glandular

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[1] A. I. Gates, *Elementary Psychology*. Copyright 1928 by The Macmillan Company. Reprinted by permission. P. 415.

[2] Since the stream of thought consists of ideas we may call mental activity ideational behavior.

system—it is a reaction of the organism as a whole. The indefiniteness of our present knowledge forces us also to admit that the assumption that the cortex is the organ of consciousness must be considered as speculation rather than demonstrated fact. Many psychologists in fact, recognizing the fact that the brain and other parts of the body act together as a unit, prefer to say not that the *brain* thinks but that the organism, as a whole, thinks.[1]

The experimental evidence of psychologists substantiates this viewpoint. There is no localization of mental activity, and thinking can therefore not be classified in the way suggested by psychologists who believe that the mind consists of faculties.

The second error of these so-called "faculty" psychologists lies in the assumption that we may strengthen the faculties of our minds by exercises, irrespective of the present or future value to us of these exercises. The dissection of literary masterpieces was for decades prescribed for their classes by teachers of English literature largely for this reason: they felt that in this way they could increase the difficulty of the study of literature and that by so doing the study of literature would develop in the student certain specific faculties, the faculty of analysis, the faculty of reasoning, the faculty of imagination, and so on. But they discovered to their sorrow that somehow their students did not develop these qualities; on the contrary what they did develop in too many instances was a great distaste for the reading of literature. The design therefore of making classroom subjects difficult, for the purpose of developing and strengthening faculties of the mind regardless of the present or future value of the subjects studied, plainly resulted in failure. Consequently modern teachers of literature have begun to discard this method and are attempting to harmonize the manner of study in school and college with that followed by adult readers who read and by scholars who study, for the love of it. They know that we learn what we do and later we do what we have learned. They know that if students are to read and enjoy literary masterpieces in life after college days are over they must read and enjoy them while they are in college.

Consequently, since the attempt to classify mental activities on the basis of the psychology just discussed is based on error and has resulted in failure, we must turn to some other method. It is evident that thinking exemplifies four typical characteristics: (1) it is conscious;

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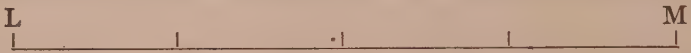
[1] A. I. Gates, *Elementary Psychology*. Copyright 1928 by The Macmillan Company. Reprinted by permission. P. 100f.

(2) it is ideational, that is, composed entirely of ideas; (3) it is dependent on past experience; (4) it is sequential.[1] Every kind of thinking exemplifies these four characteristics but they differ greatly in the degree to which they are present in any particular mental experience. We shall attempt to classify the kinds of thinking on the basis of these four characteristics.

In order to objectify our discussion let us construct a scale. One end of the scale will represent little, the other end much of each one of the four characteristics suggested in the foregoing paragraph. If a mental experience exemplifies only a small amount of each one of these four qualities we shall call it a low type of thinking. If, on the other hand, a mental experience exemplifies a large amount of each one of these four qualities we shall call it a high type of thinking.



Night dreaming may well be placed near the left or L end of this scale. Consciousness is at a low ebb. Much of what we dream, while it is ideational, is hazy. Although past experience is drawn upon there is a great lack in accuracy of recall. Frequently portions of many experiences are grotesquely mixed up so that the resulting dream is extremely bizarre. Night dreaming too lacks purpose, for while the ideas involved are sequential they are not at all consequential. It is no wonder that psychologists refer to night dreaming as undirected or uncontrolled thinking.

Daydreaming comes a little higher on the scale. Consciousness is much more active. The sequence of ideas is more logical, the recall of past experience more truthful and accurate. There is present a tendency to let the trend of ideas take its own course but within limits. Such steering of thought as exists is largely negative, or in other words, the direction given is with the purpose of keeping the line of thought within certain boundaries rather than with a conscious purpose to reach a certain end. The difference between night dreaming and daydreaming lies in the difference of degree in the intensity of consciousness, in the accuracy of recall, and in the direction which ideas take.

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[1] The sequential element in thinking is variously referred to as a "train" of ideas, a "line" of thought or as a "course" of reflection. It refers to the dependence of any particular idea on the idea which immediately precedes as well as the idea which immediately follows. Although ideas in a "line" of thinking may seem unrelated, analysis will reveal a definite sequence. When the thinker *directs* the sequence in order to achieve a purpose we call thinking consequential.

The lack of definiteness in day and night dreaming has led some writers to refuse to consider them thinking at all. Crawford, for example, insists that all thinking must originate in a problem, a doubt, a perplexity, or a difficulty. If one has no choice or decision to make, no goal to reach, no obstacle in his path, he does no thinking. In other words, one thinks only when he has to.[1]

The Columbia Associates in Philosophy take a similar stand when they say:

> The occasion of reflective thought becomes clear when the activities of a day are reviewed. We rise, dress, breakfast, read headlines, go to business, but only when the morning's mail brings up a question requiring a decision does real thought make its appearance. Thought comes when decisions or conclusions are necessary, when the usual succession of acts is interrupted and consideration has to be given to the next step. A doctor thinks when he has to diagnose a new case, a lawyer thinks when he considers the elements of a dispute and their relation to precedent, a student thinks when he applies his knowledge to the solution of an original problem in geometry, a city official thinks when he considers the best method of making a tax levy or improving the school system.[2]

According to this viewpoint ideational behavior may be called thinking only when it occurs on the plane of reflection, that is, when it is purposeful. Freeman defines thinking in this way when he refers to it as "setting up a conscious goal, the attainment of which presents difficulties, and the discovery and recognition of that relationship between the elements of the problem which will lead to its solution."[3]

This kind of ideational behavior, that is, purposeful thinking, evidently falls near the right or M end of our scale. The four characteristics of thinking are present in a large degree. The activity is almost purely ideational. There is very little dependence, if any, on sensory experience. It is highly conscious since it is intensely purposeful, since much use is made of past experience and since the train of ideas is extremely logical. In fact, the distinguishing characteristic of this kind of thinking as compared with day and night dreaming is that it is consciously directed and controlled.

Directed or controlled thinking has been designated variously as conception, reflection, reasoning, problem-solving, and creative imagination. Carr says:

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[1] C. C. Crawford, *The Technique of Study*, p. 131.

[2] *An Introduction to Reflective Thinking* by Columbia Associates in Philosophy, p. 2f.

[3] F. N. Freeman, *How Children Learn*, p. 215f.

> There are three kinds of ideas—memory, imagination, and conception. One can remember, imagine, and conceive of things. . . . A person remembers some previous experience of his own in the way in which it occurred. One imagines objects which have not been encountered in actual experience, but which are hypothetical or prospective objects of experience which may or may not be encountered in the future. One may thus imagine some actual object not yet experienced, some non-existential object which may be constructed as a new machine or a new style of dress, or some phantastical object like a cat with horns. Memorial and imaginary objects thus differ in their temporal reference. Objects of memory belong to the past, while imaginary objects can be experienced only in the future. . . . Conceptual objects consist of single items or groups of items which have been abstracted from past experience.[1]

Conception represents an abstraction of past experience and it is therefore a type of reasoning, namely, abstract reasoning. Most of the reasoning about geometrical forms is conception. So, too, is most of so-called formal logic.

Reasoning or problem-solving or reflective thinking are also carefully directed forms of thinking. The four characteristics suggested previously are all present to an unusual degree. In addition to these four, reasoning possesses two other characteristics; for one thing, it is by nature significantly problematic. That is to say, there is a state of uncertainty or of perplexity. This problematic state reveals two important elements, a feeling of dissatisfaction with things as they are, and a desire to improve them by solving the difficulty. Finally, this desire indicates the direction in which mental activity moves and becomes an adventure into the unknown. This expectant look into the future is then the second extra characteristic possessed by reasoning. Headley rightly says:

> To constitute a course of reasoning, judgments must be *sequential* and . . . *consequential*. They must have some consequence for us and of that consequence we must be aware. In short, true reasoning is purposive.[2]

Reasoning is also a trial and error process. The thinker is an explorer. He tries first this and then that. He watches for clues. He discards unpromising leads, he pursues promising ones. For example, a few days ago the writer and his wife were starting to a party. They discovered that their automobile engine would not start. The starter turned the engine over, but there was no other sign of life. What might be the matter? Previous experience suggested that the gasoline tank might be empty, but upon investigation there was found to be an ample supply of gasoline. Previous experience also suggested that the choker might not be functioning, but upon examination the carburetor was found to be flooded with gasoline. The carburetor was put in order but still the engine would not function. At this point attention was turned to the wiring system. The battery was operating properly else the starter would not have functioned. But when the light switch was turned on there proved to be no lights. Evidently the difficulty was in the wiring. Upon investigation a loose connection in the ignition system appeared. This was repaired and the problem was solved.

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[1] H. A. Carr, *Psychology*, p. 165f.

[2] L. A. Headley, *How To Study in College*, p. 222.

In this case the method of trial and error was employed throughout. The first step was the examination of the gasoline tank, the next was the examination of the choker; the third move, in which the light switch was turned on revealed a clue, which led to the final solution. It was not at any moment an aimless trial and error process—every move was directed and the outcome of each trial was watched closely.

If reasoning is a high type of thinking, judgment in turn is a high type of reasoning. In exercising judgment the thinker not only controls the process of thinking, he also evaluates what he thinks and what effect his thinking will have on the thing on which judgment is passed. Judgment, therefore should be placed even nearer the M end of our scale than reasoning.

Finally, there is creative imagination which stands at the extreme M end of the scale, and is the highest type of thinking of which the human mind is capable. Not only are all of the characteristics of reflection present, but the thinker must marshal his ideas in such a way that a new combination of them will result. In music for example, as Gates says:

> The composer must imagine new things, not merely react to what is before him. To be sure, he utilizes recalled facts and must work, in his imagination, with musical notes. His work, however, is that of imagining new combinations of these notes; he must create.[1]

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[1] A. I. Gates, *Elementary Psychology*. Copyright 1928 by The Macmillan Company. Reprinted by permission. P. 440.

Imagination emphasizes the element of invention suggested by Woodworth. He says:

> The materials manipulated in imagination are usually facts previously perceived, and to be available for mental manipulation they must now be recalled; but they are not merely recalled—they are rearranged and give a new result that may never have been perceived. A typical product of imagination is composed of parts perceived at different times and later recalled and combined, as a centaur is composed of man and horse, or a mermaid of woman and fish. Imagination is like reasoning in being a mental reaction; but it differs from reasoning in being manipulation rather than exploration; reasoning consists in seeing relationships that exist between facts, and imagination in putting facts into new relationships.[1]

Imagination has its basis in analysis; it possesses the ability to see all of the elements in a situation and thus to foresee the results. It is fundamental in creative art. It has made possible the composition of music and of literature. It is the genetic force in painting, sculpture, and architecture. It is the creative power behind the whole of our modern civilization. Before bridges or ships are built, or railroads are constructed, or canals are dug, the human imagination creates these things in the mind. It is imagination which projects into possibility every new invention, every new improvement which makes living easier and life happier. Imagination is not, however, limited to the prospective realization of ideas in concrete form, valuable and important as these are. It is imagination which has developed the ideals of the nations. It is imagination which is reducing those ills of the human race, slavery, drunkenness, and disease. It is imagination which has conceived the ideals of democracy, of equality of opportunity, of the universal brotherhood of man, and of a planet without war and strife. It is imagination which has given us our conception of God and offers us triumph over Death, by assuring us of a glorious immortality.

THINKING AND STUDY

In an earlier chapter we defined study as self-directed conscious learning. Evidently some forms of thinking will not satisfy the demands of this definition. Day and night dreaming, because of their lack of direction, are eliminated at once. But on the other hand, perception may be study, if it is directed and learning results from it. Thus, the teataster samples a variety of teas. He tastes each one recognizing its individual qualities. The recognition of the superior quality of one particular tea as compared with others would represent conscious decision or learning, in this case self-directed. The activity would correctly, therefore, be study.

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[1] R. S. Woodworth, *Psychology*, p. 483f.

When we look at thinking from the standpoint of study, we perceive that although all study is thinking not all thinking is study. Study meets all the qualifications of thinking: (1) it is conscious, (2) it is entirely ideational, (3) it is dependent upon past experience, (4) it is sequential; in addition it must represent self-direction and learning, two criteria which thinking does not always meet. A comparison of the characteristics of study with those of reasoning and of creative imagination will show that these two kinds of thinking are always study. They always represent highly self-directed conscious learning.

Increasing the Efficiency of Thinking

Dewey declares:

> A thinking being can *act on the basis of the absent and the future.* Instead of being pushed into a mode of action by the sheer urgency of forces, whether instincts or habits, of which he is not aware, a reflective agent is drawn . . . to action by some remoter object of which he is indirectly aware.[1]

We may surmise from this statement that it is possible to improve one's ability to think just as he improves his ability to read or to speak or to perform the manifold physical activities of intelligent living. Before we consider how one's thinking may be improved we must take up three ways in which ideas may be secured and put in order.

1. Keep your mind active. We have said previously that thinking is a highly active process. Mental experience represents action quite as much as physical experience. We sometimes incline to believe that thinking is passive. But if an individual is awake we may be sure that he is thinking, that there is some kind of mental activity going on. Edison tells us that he made about a thousand experiments before he discovered the right combination which resulted in the incandescent lamp. Columbus worked many days before he went to the convent of La Rabida to induce the prior to intercede for him at Queen Isabella's court. Whenever the efficient individual finds himself in a difficulty,

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[1] John Dewey, *How We Think,* p. 14f.

when he is confronted by a problem, he does not sit idly waiting for something to happen. On the contrary, to such a person the difficulty acts as a spur to increase the intensity of his application to it. He may not always reveal in physical expression the degree of this intensity but if one could look into his brain he would find a multitude of ideas hard at work.

Observation and testing have revealed that people of high intelligence are usually mentally alert and highly active. They are able to give close attention to an activity for a long period of time. Individuals of low intelligence, on the other hand, are inclined to be phlegmatic and slow in their mental activities. Their span of attention is extremely short. In observing people of this latter type while they were taking the Terman Individual Intelligence Test, the writer noticed that frequently those being examined assumed a reclining position soon after the start and not infrequently fell asleep before the examination was completed. But we find that nature bestows on us a capacity for mental activity if we have normal or more than normal intelligence. It is our business to cultivate this natural gift so that when the perplexities of life occur we may be able to unravel them.

2. Increase your stock of ideas. Since ideas are the "stuff" with which we think it is evident that the efficiency of our thinking depends much upon the range and the quality of our stock of experiences. Kilpatrick says that our ideas and concepts consist of meanings. He says:

> Suppose by some mischance you were to lose your stock of meanings, how would you get on? . . . You couldn't talk, for language is but one lot of meanings. You couldn't eat, for you wouldn't know food from stones or clothing. You couldn't walk about; you wouldn't know a tree from a hole in the ground or a house from a paved sidewalk. Your thinking would reduce itself to practical zero; you'd have nothing to think with. It is hardly too much to say that you and your world (that is, you as a thinking being and the world as you use it, as it exists for you) consist of the meanings that have been built up in you by all your varied experiences. . . . Meanings are the stuff of which one's thought world is built, and they exist as the means of the conscious control of self and the world.[1]

Kitson also agrees that it is essential to have a large number of facts at one's disposal. If a student is going to reason effectively about problems in history, mathematics, geography, it is absolutely indispensable that he should know as many of the facts of those subjects as he can. Students experience difficulty in reasoning about certain subjects because they are not familiar enough with them. Apparently the most effective reasoning in any field will be done by the individual who has had the most extensive experience in that field.[1]

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[1] W. H. Kilpatrick, *Foundations of Method.* Copyright 1925 by The Macmillan Company. Reprinted by permission. P. 220f.

The enrichment and enlargement of experience therefore becomes one of the major duties of every student. This enriching experience may well be first hand whenever possible. He should observe closely experiences of every kind. He should make trips to places of interest. He should cultivate a wide range of interests in music, art, sculpture, athletics, sports, motoring, and in the animal and plant world. In addition to these direct experiences he should seek such wide vicarious experience as comes from reading books, magazines, and newspapers as well as from listening to music on the radio and the victrola.

3. Make your stock of ideas usable. Not only must the efficient thinker have a wealth of ideas to draw on, but he must put this stock in orderly form. One way to do this is to systematize his knowledge by framing clear definitions. A careful thinker has at his disposal a large stock of accurate definitions. Textbooks specialize in clarifying knowledge by means of definitions, some of which a student should learn. Experience constantly affords us opportunities for framing our own definitions which should be made with great care. Definitions represent mental economy, for they serve as tools with which to expedite our mental activities. The individual who has not worked a part of his stock of experience into clear definitions is like the farmer who does all of his work by hand. The efficient thinker uses his stock of definitions in some such way as the farmer who makes his tools and machinery work for him.

A second way to put our stock of ideas in orderly form is to classify them. Similar ideas should be brought together in a group. The repetition of the same or similar experience should lead to the formulation of principles of action. The similar and dissimilar elements in our experiences should be noted with great care. The efficiency of our thinking about automobiles for example, is greatly increased by classification. There are certain points of similarity. All have engines, bodies, wheels, tires, fenders, and so on. There are likewise certain points of dissimilarity. Some have disc, some wire-spoke, and some wooden-spoke wheels. Some engines have four, some six and some eight cylinders. There are touring cars, sedans, sport models, coupés, and so on. In trying to remember the facts presented in our reading and in lectures, we are greatly helped by outlining which is a form of classification. In all the activities of life our efficiency is increased by the classification of knowledge. Ideas, like things, should be put in order, they should be placed where they belong so that we may find them quickly when we want them.

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[1] H. D. Kitson, *How to Use Your Mind,* p. 133.

A third way to put our ideas in orderly form is to pay close attention to the manner in which these ideas come to us. The necessity of repeating certain of our experiences before we can make use of the ideas resulting from them springs from our failure to note the experience carefully in the first instance. The method used in solving a puzzle may be taken as an example. The inefficient thinker solves a puzzle largely by accident. He pays little or no attention to the steps by which he did it. When he is asked to solve the same puzzle a second time he must repeat a large part of the original trial and error process. The efficient thinker, on the other hand, watches his moves as he makes them and draws up certain rules or principles by which he can later solve the same puzzle with speed, or a similar one with ease.

A fourth way to put our ideas in orderly form is to learn them in the way in which we are likely to use them later. The method of learning a foreign language by studying its conjugations, declensions, and vocabulary independently of reading or conversing in it is based on a fallacious assumption, namely, that there is no relationship between either what one learns or how one learns it, and how one uses it later. The way to acquire an ability to read or speak a foreign language is to read and speak it by sentences, the basic unit of thought, and not by learning A B C's, phonic elements, syllables or even words.

Up to this point the suggestions for improving the efficiency of our thinking have been concerned primarily with providing an orderly stock of ideas, the "stuff" with which we think. Let us now consider the ways in which our use of ideas may be improved.

We have previously said that ideas are involved in every kind of mental behavior. The "stuff" of our day and night dreams consists of ideas quite as much as does that of our problem-solving and creative imagination. The basic difference between the ideational behavior representing day or night dreaming and reasoning or creative imagination is, as we have said, a difference of control. The former exemplify little or no personal control, the latter exemplify rigorous control to a high degree. The nature of the former types of thinking is determined almost entirely by the stock of usable ideas with which our minds are stored. The efficiency of the latter, on the other hand, depends fully as much or more upon the manner in which we consciously control the train of thought in the direction of solving our problems, creating our inventions, or building our futures. In the discussion which follows we shall ignore largely the lower types of thinking and deal more particularly with the higher kinds, problem-solving and creative imagination, reserving a discussion of judgment to the next chapter.

In order to objectify our discussion let us use an experience which the writer had a few years ago with his automobile. He was driving to college one morning expecting to arrive in time to meet an eight o'clock class. While he was still about six blocks from college, his car suddenly stopped and refused to start again. (A conscious difficulty.) An examination of his watch showed him that it was seven forty-five, only fifteen minutes until his class hour. Whatever was done, had to be done quickly. An examination of the gas tank showed that it was empty. (Location and definition of difficulty.) Several suggestions of possible ways out of this predicament flashed through his mind. He might hail a passing car and attempt to borrow gasoline; or he might telephone the gas station to bring gasoline to him; or he might push his car to the curb and cover the rest of the distance on foot. (Suggestions of possible solutions.) He studied the implication of each suggestion as it occurred to him. He discarded the first two because of the length of time it would take to carry them out. But suggestion number three he accepted because it seemed to him to be the one best fitted to the difficulty in hand. (Comparison of the merits of the three suggestions.) Having decided thus, the writer pushed his car to the curb and walked to college, arriving in time to meet his class. At the end of the class hour he went to a gas station, bought a gallon of gasoline and took it to the car, which he thereupon drove to the campus where he continued his day's program. (Final action on the suggestion and completion of the problem.)

Having secured a stock of usable ideas, we are then ready to give attention to seven rules by which we may improve our thinking.

1. Feel the need of thinking. One difference between the savage and the civilized man is to be found in the reach of their thinking. The barbarian is content to limit his thinking to the need for supplying the necessities of life, that is, food to satisfy hunger, drink to satisfy thirst, and enough clothing and shelter to protect against inclement weather. But civilized man has extended his need to many other things, and has extended his thinking also to supply everything that he needs. He is not content to satisfy hunger in an elemental way. He fashions dishes and kitchen utensils, he builds dining rooms and dining furniture, he develops a whole science of cookery, he adorns his table and develops wit and sentiment to accompany his eating.

Dewey believes that the superior thinking of the civilized man may be attributed to his greater ability to keep his curiosity active. He points to the small child

> . . . reaching, poking, pounding, prying, an inveterate tendency to fool. . . . With respect to curiosity, the teacher has usually more to learn than to teach. Rarely can he aspire to the office of kindling or even increasing it. His task is rather to keep alive the sacred spark of wonder and to fan the flame that already glows. His problem is to protect the spirit of inquiry, to keep it from becoming blasé from overexcitement, wooden from routine, fossilized through dogmatic instruction, or dissipated by random exercise upon trivial things.[1]

For far too many persons college life ends in failure because they have no feeling of a need to know, to find out, to enjoy, to grow. Courses become boresome because students have either lost or have never felt the zest of the inquiring mind. They have no overpowering sense of urgent need. It is no wonder that we have to be encouraged to be on the watch for problems that need solving, to fix them in mind, and to assume the responsibility of solving them.

The truly able thinker is aware not only of his own need, but of mankind's need as well, and he foresees the difficulty involved in setting himself to satisfy it. Nobody told Edison to make his many electrical inventions; nobody ordered Henry Ford to manufacture a motor car whose price would be within the reach of almost every American; nobody ordered Peary to discover the North Pole, or Columbus to find a new route to the East Indies; nobody told Pasteur to take an interest in fermentation and thus discover that bacteria cause many diseases, or

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[1] John Dewey, *How We Think*, p. 31, and p. 33f.

James Watt to put steam to work in factories and elsewhere, or Marconi to make use of electric waves in the ether without having to clutter up the whole earth with wires and poles. While all of these men felt an urgent personal need to do these things, no doubt, they felt a compelling human need too, and they shouldered voluntarily the responsibility of increasing the knowledge and the wealth of the world, the convenience and comfort of life, not because they were ordered to do so but because they were alert and efficient thinkers.

2. Locate the spot where the difficulty lies. The next step of the efficient thinker after he has assumed the responsibility of solving a problem is to proceed as directly as possible to its solution. In the writer's experience with his automobile he instituted a search to discover why the engine had stopped. The trouble was found to be an empty gasoline tank. On a previous occasion it was due to defective wiring.

In order to locate the difficulty, that is, the problematic element, successfully, one's attention must be highly concentrated. The writer did not fritter away his attention by counting the passing automobiles nor identifying their makes while he was attempting to determine why his automobile had stopped. His whole attention was riveted on the problem at hand. Headley says:

> Search is itself an act of concentration. To hunt is to direct attention. Whether a sportsman hunts for game, a child plays at hide and seek, a miner prospects for gold, or a man of affairs scrutinizes an illegible countenance, the story is the same; every least sign of the thing sought snaps its hold on attention.[1]

The efficient thinker may help himself in locating the problematic element by looking for points in the present problem which are familiar, or in other words, by searching his previous experience. Look first at the spot where a similar difficulty was located on a previous occasion. The reason why the writer looks at the gasoline gauge when his car refuses to go is because he has found the seat of trouble in the gasoline tank before. The garage mechanic, in endeavoring to locate engine trouble, applies a series of tests any one of which, as he has learned from previous experience, may reveal the seat of the difficulty. It is by a process of elimination that the real difficulty is finally discovered.

The drawing upon previous experience in a new problematic situation reveals the value of a large, orderly stock of ideas. If past experience has been clearly defined and classified, if learnings have been studied and watched for their future usefulness, the locating of a present difficulty will be greatly facilitated. In fact, it is here that the difference between the amateur and the expert is revealed. High ability to locate trouble and to remedy it distinguishes the expert, lesser ability to do so stamps the individual as an amateur.

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[1] L. A. Headley, *How To Study in College,* p. 65.

After one has located the difficulty he must define it accurately. The exactness of the analysis of a difficulty in most cases determines the pertinency of the suggested solutions which follow. For example, suppose that a doctor makes a call on a patient. His first step is examination, that is, location of the difficulty; his second step is definition, that is, recognition of the difficulty, these two together, location and definition, forming his diagnosis of the case; his third step is prescription to cure the disease. Suppose he finds that the trouble lies in the stomach. Having located the difficulty he must then define it, for there are half a hundred ailments which affect the stomach. The essential element in this definition of the difficulty is the rejection of those things which do not apply to the present case.

This need of defining a difficulty becomes apparent to the student as soon as he has to make a search for materials called for in a lesson assignment. If, for instance, he has to make a report in a social science course he should, at the outset, state the topic with great definiteness in order to avoid amassing material which is not pertinent. In laboratory work materials with which he experiments have to be chosen with strict care and the experiment has to be performed with absolute exactness if it is to be successful. A careful statement of the purpose of the experiment will be of aid in achieving success.

3. Suggest solutions. The correct solution to a problem may usually be found in a number of ways. The one by blind trial and error we have already considered. This method is one of the least intelligent although it is undoubtedly the most common even among men. It is the only one used by animals when they find themselves in difficulties. The inefficient thinker regularly does the first thing which suggests itself to him in much the same way that an animal reacts in a predicament. If that fails, he tries something else, and so on until he hits, if he is fortunate, upon the right solution. A second way to solve a problem and the lowest and most contemptible in point of intelligence, is to set others to doing it. Some students spend much of their time imposing

their problems on their friends who offer suggestions as to possible solutions. This method is indefensible because it fails to yield any training to the student by means of which he will be enabled to solve future problems which he cannot delegate to someone else. The ability to solve problems is learned by practice just as other learnings result from practice. The efficient thinker welcomes problems, he delights in surmounting obstacles, he revels in verifying his guesses. Still a third way to solve a problem and the most intelligent of all, is to make reasonable suggestions for solutions yourself, then to study their implications and later to verify their validity and reliability. In other words, your thinking need be neither a blind hit and miss affair, nor yet a search for obliging friends to solve your problems for you; it ought to be a systematic, orderly analysis. The efficiency of the process used depends largely on the kind and the number of suggestions which the thinker makes for solving a given problem.

Dewey says:

> Suggestion is the very heart of inference; it involves going from what is present to something absent. Hence, it is more or less speculative, adventurous. Since inference goes beyond what is actually present, it involves a leap, a jump, the propriety of which cannot be absolutely warranted in advance, no matter what precautions be taken.

He suggests that this activity may be described as supposition, conjecture, guess, hypothesis, and theory.[1] This uncertainty about the outcome of a problematic situation leads Kilpatrick to define thinking as an adventure into the unknown, an expectant look into the future.

In solving our problems, then, we are confronted with the necessity of making shrewd guesses. May tells us that great minds are all shrewd guessers. Huxley said that the astronomer Kepler was the wildest of guessers. May bewails the tendency of teachers to advise their pupils not to guess "and yet we find that the greatest minds of the world have been the boldest and wildest guessers."[2] Headley says, in similar vein:

> We sometimes hear of people who reason "straight to the point." In all literalness no reasoner goes *straight*. If, in any particular case, he appears to do so, you may be sure that it is by accident or, more likely, by employing readymade decisions. Constructive reasoning begins with

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[1] John Dewey, *How We Think*, p. 75.

[2] M. A. May, *How To Study in College*, p. 176.

beating about the bush. The reasoner hunting for suggestions, like the sportsman hunting for game, proceeds indirectly by beating bushes to ascertain what may be lurking there.[1]

If our stock of usable ideas is large, suggestions will come readily enough for most needs. But there will always be certain times when we will have difficulty in finding suitable suggestions. What shall we do at such times? Headley makes the following six suggestions:

a. Concentrate. Shut out all distractions. Eliminate all suggestions that are not relevant. Colvin once said that it is a common experience that when we begin to think about something, we discover all sorts of relationships that before were unsuspected by us.[2]

b. Give freedom to the imagination. The value of this suggestion is apparent when you remember how many suggestions children can offer in a time of need. All superior minds are highly imaginative. Great scientists such as Faraday, Newton, Darwin, Pasteur, used their imaginations constantly.

c. Relax occasionally. If a difficulty will not resolve itself with your utmost effort, it is well to relax for a time and turn your attention to something else. Frequently such relaxation releases a new stream of thought and an illuminating suggestion comes as a result.

d. Use analogy. Think of some other situation in which you were confronted by a similar difficulty. Doctors detect diseases by comparing symptoms in a given case with symptoms in other cases about which they have known. One must of course guard against carrying analogy too far.

e. Study the sequence of your experiences. Observe what happens when you do certain things. If, for instance, you are debating the wisdom of drinking coffee at a dinner, ask what effect on yourself you observed the last time you drank coffee at dinner.

f. Occasionally go back and retrace your steps, or think of the reverse procedure. In trying to quote a poem, for example, you may forget a line. If you go back and repeat the previous stanza, the connection may be found to turn up correctly on the second attempt.[3]

Book says that suggestions will come more readily if we persist in thinking about a problem until we succeed in finding a solution. He also urges us to believe that we can and must succeed. He says:

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[1] L. A. Headley, *How To Study in College,* p. 230.

[2] S. S. Colvin, *Introduction to High School Teaching,* p. 282.

[3] L. A. Headley, *op. cit.,* p. 231f.

> Much . . . depends upon the attitude which you assume toward your problems. . . . The key to the situation lies in arranging conditions so that you will succeed with every problem that you try to solve. This may be accomplished by suitable encouragement and by practicing with relatively simple problems until the habit of trying patiently until you think of the right solution has been established. Nothing can take the place of this habit of believing that you really can solve all the problems you encounter, for this attitude makes it possible for you to keep on trying until the proper suggestion appears, and until a successful solution to your problems is found.[1]

4. Study the implications of your suggestions. In the writer's experience with his stalled automobile he debated the merits, you remember, of a number of suggestions, to determine the best line of action to take. He might hail a passing car and ask for gasoline, but he abandoned this proposal as taking too much time. He had only fifteen minutes to spare, and it might take every moment of that time to find a driver who would be willing to help. Such a process of weighing the merits of a proposed solution is referred to as studying the implication of such a suggested solution. The inefficient thinker does not take this step of weighing the values of suggested solutions. When a suggestion comes it is immediately seized upon and put to work without studying its probable effect.

Such a weighing procedure tends to eliminate our bad guesses or poor suggestions. May tells us that great minds, in addition to being shrewd guessers, are also ruthless eliminators of their wrong guesses. "This is the mark of the true genius. Anybody can guess, but it takes a great mind to devise means of checking the guesses." He calls attention to the fact that although Kepler was the "wildest of guessers," he considered, at the same time, no labor too long nor too arduous by which he might test his reasoning or conclusions for errors. The willingness with which a discoverer organizes means for speedily, thoroughly, and pitilessly testing his conclusions indicates, to a considerable extent, the degree of his genius.[2] Michael Faraday, the father of the present electrical age, once declared,

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[1] W. F. Book, *Learning How To Study and Work Effectively*. By permission of Ginn and Company, publishers, 1926, p. 407f.

[2] M. A. May, *How To Study in College*, p. 176f.

The world little knows how many of the thoughts and theories which have passed through the mind of a scientific investigator have been crushed in silence and secrecy by his own severe criticism and adverse examinations; that in the most successful instances not a tenth of the suggestions, the hopes, the wishes, the preliminary conclusions have been realized.[1]

This examination of the implications of a suggestion amounts to a test of our thinking, which is a difficult task. For a long time philosophers have been searching for reliable standards by which to test our thinking. This branch of philosophy is called logic. Most logicians now agree on five tests of thinking. The Columbia Associates in Philosophy test the quality of a belief as follows:

a. Clarity. A good belief is unambiguous. We know unmistakably what it means.

b. Consistency with the facts. A good belief is founded on extensive and accurate observation. It is not contradicted by experience.

c. Consistency with other beliefs. There is a presumption against a belief that conflicts with other beliefs well certified by experience. Sometimes, however, it is the latter beliefs rather than the former that need to be revised.

d. Utility. A good belief is often distinguished by its usefulness in suggesting further good beliefs.

e. Simplicity. Other things being equal, that belief is best which makes fewest assumptions.[2]

5. Come to a decision. After your mind has offered suggestions and after you have balanced their implications it is necessary to make a choice among them and to decide upon which one to act. The world hates a vacillating individual who does not know his own mind, who is forever "on the fence." Thinkers may be divided into three classes according to the manner in which they arrive at their decisions. First, there are those who make decisions hastily without either considering a sufficient number of suggestions or studying their implications. These are the guessers, the thinkers who jump at conclusions. Second, there are those who take under consideration many suggestions which are not pertinent to the problem. They spend too much time in a study of the implications, largely because they anticipate consequences which do not materialize. These are the theorizers who are tardy in reaching deci-

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[1] *Experimental Researches in Chemistry and Physics*, 1859. P. 486.

[2] *An Introduction to Reflective Thinking* by Columbia Associates in Philosophy, p. 334.

sions. Third, there are those who propose a number of pertinent suggestions, study their implications and then make a definite decision. The third class constitutes the efficient thinkers.

6. Test your decisions. The final test of a decision is of course whether it actually solves the problem. Cunningham states that "no problem is solved until the answer is checked."[1] This is true in all problem-solving situations, not alone in mathematics. Kilpatrick shows how modern civilization has been built on "tested thought." Beginning with Galileo in 1590 the theories of philosophy and science were more and more put to the test, first by observation, then by experimentation. Thought, so Galileo insisted, to be acceptable must be tested by its observed consequences. Such testing of thought made inventions possible. It encouraged extensive and intensive discovery.[2] The result of this testing of new ideas is a body of reliable thought and an increased confidence in the possibility of solving problems which have puzzled men for centuries. In the same way the efficient thinker is not content merely to reach a decision: he must test his decision by practice. If it stands the test, he acknowledges it as the object for which he sought; if it does not stand the test, he renews his search for other promising suggestions.

7. Keep an open mind. Hesitancy to accept a decision until it has been tested by experience suggests again the desirabliity of cultivating an open mind. The open mind puts decisions to work to fill present needs but it never assumes that these decisions need never be modified as a result of later experience. New experiences may throw new light on the problem. Continued action on a decision may reveal flaws in its quality. How we should deal with our experiences in order to guarantee flexibility of thinking we have already suggested in Chapter V, How To Study.

TYPES OF THINKERS

Dearborn says that every one of us with normal intelligence has some kind of a "thinker." In some cases the "thinkers" are small, and not now of much use. These are the thinkers of the relatively stupid people. But they may be developed if there is will to develop them. In some cases thinkers are well developed, but rusty and dried out; what these need is use, after a thorough cleaning and oiling. These are the thinkers of lazy persons. In some cases the thinkers have parts which are likely to break down at any moment. Such thinkers as these belong to illogical persons and extravagant guessers. In other cases the thinkers are normal, but they are hindered by the uncertain and difficult action of newness; they are not used nearly enough to make them run smoothly; they should be made supple by intelligent and energetic practice. Such thinkers as these belong to the average minds. Unused thinkers, like all other unused organs, tend to atrophy, and hardening through disuse is the result of insufficient action. Dearborn says:

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[1] W. H. Cunningham, *Character, Conduct and Study,* p. 76.

[2] W. H. Kilpatrick, *Education for a Changing Civilization,* p. 9f.

> On the other hand it is as delightful as it is useful to take systematic mental exercise and so to become an intellectual athlete. But how few can be made to realize this! The process as well as the product, is a continual delight, and it is the most essential process in the mind's whole action.[1]

According to Dearborn there are six types of thinkers: fools, rusty thinkers, lazy thinkers, guessers, ordinary thinkers, intellectual giants. Each student should test himself by the criteria set up by Dearborn to see to which class he belongs.

Thinking and Democracy

The significance of thinking in a democracy cannot be overestimated. The very life of democracy depends upon it. Berry says, "Nothing should be left undone to impress upon the young that freedom of thought is an axiom of human progress." A study of the history of the human race verifies this statement. Whenever man has dared to think for himself civilization has taken a step forward. Plato, Socrates, and Aristotle gave the ancient world a new philosophy and Greece enjoyed a golden age. Galileo listened to his teachers, tested their assertions by experimentation and found many of them faulty. His example of questioning old modes of thought set a new ideal in learning and modern science was born. A mode of thinking that sets a value on inquiry and that questions *why* things are as they are, has, during the last three centuries, produced a strong trend toward democracy the world over. It is evident in the political world. Yesterday governments were dictatorial, sometimes despotic and autocratic. Kings and kaisers held sway by "divine right." Today most of the governments of the world are, at least in some degree, representative of the people they govern. Increasingly mankind is enfranchised regardless of sex, race, creed or color.

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[1] G. V. N. Dearborn, *How To Learn Easily*, p. 150f.

The trend toward democracy is evident also in the economic realm. Every bit of capital was formerly a monopoly of the few. For centuries the ruling classes lived in luxury while their subjects supported them by taxes, and starved. Today the laborer is more nearly considered worthy of his hire and he may own stocks and bonds, lands and possessions to an increasing extent. In his social relationships, too, man is becoming more democratic. The world today sees less of fixed social stratification and more of the brotherhood of man. Society is becoming more plastic and class cleavages are becoming less distinct with each generation. The privileges of religion and education are also more nearly uniform today. It is a far cry from persecution for one's faith to freedom of worship and from a scheme of education which provided only for the rich, the able, and the well born, to one which attempts to give to every child educational opportunities commensurate with his capacities.

This strong trend toward democracy in our political, economic, social, religious and educational relationships represents heroic thinking on the part of millions of men and women. The student who thinks with boldness and honesty will realize that we have far to go before we attain true democracy and that we are in urgent need of unprejudiced and constructive thinking on the part of our educated citizenship. He will see too that that freedom of thinking which brings and maintains democracy implies besides great advantages, grave dangers as well. The advantages include freedom of action and certain "inalienable" rights of the individual, more discoveries and inventions which will bring an increase in comforts to all, more numerous opportunities to cultivate mental, physical and moral capacities, more privileges of culture and religion. The chief danger of democracy is that liberty may run to license, that freedom of action may not always be accompanied by reason. The proponents of true democracy, taking cognizance of the frailties of human nature, admit the essential need of control of action. But the source of this control differs greatly in a democracy from that in an autocracy. Under an autocracy the individual is compelled to act in unquestioning obedience to an authority outside himself in which he has no voice. But in a true democracy his authority is two-fold, one that is external, in which he has a voice, and one which is an inner self-imposed law, based on knowledge, justice and truth.[1]

Since the future of democracy depends so much upon effective thinking the college student should welcome the opportunity to develop accuracy in thinking and keenness of mind which a college education affords. When every college student prizes his ability to think independently and effectively there will be no fear about the future of our civilization, for it is reflective thought that leads us out of the bondage of ignorance into the freedom of knowledge.

SUMMARY

Thinking is ideational behavior. Its significant characteristics are that it is conscious; it is exclusively ideational; it is dependent upon past experience; it is sequential.

Thinking cannot be classified on the basis of the notion that the mind consists of faculties because we know now that our mental activities involve the entire organism and not small, specifically defined areas of the brain. The best basis of classification, widely accepted by modern psychologists, is the degree of control which is exercised in mental experience. Since day and night dreaming exemplify little control they may be referred to as low types of thinking, while reasoning and creative imagination, since they exemplify control in a large degree, may be called high types. Other kinds of thinking are somewhere between these two extremes.

Since study is self-directed conscious learning only the highest types of thinking qualify as study. All study, therefore, is thinking, but not all kinds of thinking constitute study.

The following rules are suggested whereby the student may increase the fund of his ideas and may improve the effectiveness of his thinking:

1. Keep your mind active.
2. Increase your stock of ideas.
3. Make your stock of ideas usable.
4. Feel the need of thinking.
5. Locate the spot where the difficulty lies.
6. Suggest solutions.
7. Study the implications of your suggestions.

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[1] The student will find an excellent discussion of this viewpoint in John Dewey, *Democracy and Education*, page 102f., and W. H. Kilpatrick, *Source Book in the Philosophy of Education*, Chapter XI.

8. Come to a decision.
9. Test your decision.
10. Keep an open mind.

Efficient thinking is doubly significant in a democracy because the life of a democracy depends upon the quality of the thinking of all its citizens. Democracy assumes "freedom of action, but freedom of action without freed capacity of thought behind it is only chaos. If external authority in action is given up, it must be because internal authority of truth, discovered and known to reason, is substituted." College students who are the prospective leaders of the coming generation, bear the first responsibility for developing efficiency in thinking.

QUESTIONS

1. What is the nature of thinking? Name its four significant characteristics. Illustrate each characteristic.
2. Make a list of different kinds of thinking. How may one determine the quality of each kind of thinking?
3. What is the difference between directed and undirected thinking? Give an example of each.
4. How are thinking and study related?
5. Make a list of suggestions for increasing the efficiency of thinking. From your own experience give an example of each of your suggestions.
6. How should one proceed in solving a problem?
7. How may one increase the number of his own suggestions for solving any given problem?
8. Name the five tests of thinking proposed by the Columbia Associates in Philosophy. Give an example of each test.
9. What is meant by a type of "thinker"? Name Dearborn's types and tell to which one you belong.
10. In which form of government is efficiency in thinking more important, in a monarchy or in a democracy? Give reasons for your answer.

EXERCISES

1. How are thinking, reasoning, creative imagination and studying related? Show how each is dependent upon experience. (Sel. Ref. 5 and 8.)
2. How much of reasoning should be automatized? (Sel. Ref. 7 and 12.)
3. Read Sel. Ref. 2, and Chapter XII in Sel. Ref. 5, and report on the relative importance of ability to think straight in a democracy and in a monarchy.
4. Make a list of problems which confront you at the present time. How may this chapter help you to solve them?

5. Give an example from your own experience of a difficult problem which you succeeded in solving. Show how you used the five steps in Dewey's problem solving analysis. (Sel. Ref. 6, Chapter VI.)
6. Headley suggests the use of circles in arriving at logical conclusions. Read pages 244-250 in Headley. (Sel. Ref. 7.) Then try your hand at the exercises on pages 254-255, exercise number 13.
7. Explain the expression, "He doesn't think straight."

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CHAPTER XII

Forming Reliable Judgments

In the preceding chapter we discussed the nature of thinking as well as its significant characteristics. We declared that judgment is a high type of thinking because it demands great alertness of consciousness, clear ideas acquired from a rich past experience, and a distinct purpose which makes the process highly consequential. To devote an entire chapter to this one type of thinking seems justifiable when we remember how highly we prize good judgment in all of the activities of life. We seek the advice of people in whose judgment we have confidence. We avoid the advice and even the opinions of those whose judgment we doubt. Sound judgment is a characteristic of the best thinkers; it is the sure mark of successful men and women.

Dewey has observed that the significant traits of ordinary judgment are quite similar to the procedure of the judge on the bench. He says:

> There are three such features: (1) a controversy, consisting of opposite claims regarding the same objective situation; (2) a process of defining and elaborating these claims and of sifting the facts adduced to support them; (3) a final decision, or sentence, closing the particular matter in dispute and also serving as a rule or principle for deciding future cases.[1]

To judge implies that one has reached a conclusion in regard to the significance of certain experiences, a study which was impelled by doubt or need. For example, as I go to bed some evening I observe that the weather is moderate, with the moon shining and everything serene out of doors. When I arise the next morning I notice that the house is unusually cold, that windows and doors are rattling. I hear the moaning and howling of wind, and when I look out of my window I observe the branches of the trees being tossed violently about. I observe that people are shielding their faces from a biting gale. I see chimneys belching smoke which scurries along the ground. There are flurries of snow in the air and the ground is already becoming white. Everything leads me to conclude that we are in the grip of a winter storm. Why? Because a comparison of my observation at the present moment with previous experiences of a similar nature justifies me in such a conclusion.

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[1] John Dewey, *How We Think*, pp. 101-102.

Let us note how this experience exemplifies the three essential features of judgment mentioned by Dewey. I awaken to find the room cold. I hear the rattling of doors and windows. I *guess* that the weather must have changed significantly during the night. But it was warm and serene when I went to bed. How could it have changed so suddenly? (Controversy consisting of doubt.) Now I look for facts to justify my guess that a storm is brewing. I look out of the window and behold all of the phenomena of a winter storm. I check each of them against previous experience. (Process of defining and elaborating the claims of the contention that a storm is brewing.) I draw the conclusion that, indeed, this is a real winter storm. (A final decision.) This decision strengthens other decisions previously reached on the basis of similar phenomena, and consequently it contributes to the validity of judging similar situations in the future.

If a student is to be successful, he must exercise sound judgment. He will be constantly confronted by the necessity of judging the worth of statements which he hears and reads. He must decide on the relative importance of facts given him in lectures. He must pass judgment on the truthfulness, the accuracy and the appropriateness of the facts which he gleans from his reading. He must form opinions on many practical matters as well, in order to exemplify intelligent living. In short, he needs constantly to pass judgment on all the phenomena which constitute his experiences. Perhaps no mental activity is so constantly in use as judgment, good or bad.

How to Increase the Quality of Judgment

A few years ago the president[1] of a prominent American university made the following statement:

> For a quarter century past American educational practice has been steadily losing its hold upon guiding principle and has, therefore, increasingly come to float and drift about upon the tide of mere opinion, without standards, without purpose and without insight. The little red schoolhouse of the generation that followed the Civil War, with its wretchedly poor equipment but with an earnest and devoted teacher who laid stress upon character-building and upon the fundamentals of

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[1] Nicholas Murray Butler in his *Annual Report*. Columbia University Press, 1920, p. 16ff.

intellectual training, did more for the American people than does many a costly and well-equipped educational palace such as may be seen in any part of the United States today.

This statement represents the judgment of one of the leaders in American education. What shall the student think about it? He may follow one of three courses: he may accept all of it, he may reject all of it, or he may accept part of it and reject the rest. Before either accepting or rejecting it the thoughtful student will carefully study the statement to make sure that he understands the issue involved. In this case the double issue may be stated as follows: The schools of the generation that followed the Civil War were superior to the schools of today (1) in stressing the fundamentals of intellecual training, and (2) in character-building. At this point the judicious student will look for arguments both for and against the issue. Undoubtedly much may be said in defense of Dr. Butler's attitude. The inability of many young persons to do well the every day operations of an intelligent life—their inability to spell, their inaccuracy in the fundamentals of arithmetic, their inability to read rapidly or to understand what they read with a fair degree of comprehension, their poor handwriting, their ignorance of geography, history, and civics, their slovenly speech habits, their dubious reactions to civic questions, their ignorance of the Constitution of the United States, and their failure to vote—all of these may be pointed to as evidence that the schools of today fail to achieve "the fundamentals of intellectual training." Similarly, the increase of crime, the crowded condition of our penitentiaries and reformatories, the clogging of our police courts, the constant violation of city, state and national laws, the apparent decrease in the membership of our churches, the decline in the authority of the home, the loss of respect for law and order, the great increase of young offenders—all of these may be pointed to as evidence of a failure to lay "stress upon character-building" in our schools.

The student who makes hasty judgments will be likely to jump at the conclusion that such a sheaf of arguments as these are sufficient to substantiate the statement. But to do so will be to hear only one side of the case. This the student with sound judgment is not content to do. He insists on hearing the other side as well.

It is impossible because of limited space and time, to attempt an analysis of both of the issues raised by Dr. Butler. We shall be able, however, by confining ourselves to the first issue, namely, the fundamentals of intellectual training, to show the steps by which a thoughtful student may arrive at a fair judgment of the soundness of Dr. Butler's assertion.

With Dr. Butler's statement in mind then, the inquiring student may make the following observations on the opposite side of the argument. The final test of the efficiency of the school of any period lies in the quality of its product. If the boys and girls who came from our public schools during the period immediately following the Civil War did actually demonstrate a higher degree of efficiency both in school and later in life than the boys and girls who come from our schools today, then this college president is right; if they did not, then he is wrong. The student who is searching for facts in defense of present day "American educational practice" will discover that general literacy as judged by ability to read and write is much higher today than fifty years ago. The reading of newspapers, magazines and books was by no means as nearly universal then, as it is now. As late as 1890, libraries were far from common in the United States and in those which did exist readers were tolerated rather than welcomed. Today there are thousands of libraries in the United States and millions of welcome readers. Where did the mass of people learn to read and to use libraries? The answer is, in the schools, and hence one at least of "the fundamentals of intellectual training" exists more widely today than ever before.

Since literacy was not so nearly universal fifty years ago, many people did not know how to spell, how to do number operations, or even how to write. They knew few facts of geography and of history. A few years ago the superintendent of the Springfield, Massachusetts, schools discovered in the attic of an old school building a set of examination papers which had been written in 1846 by pupils in the Springfield schools of that date. He gave the same examinations to his pupils of similar school advancement and discovered that the pupils of today who took those tests were superior to the pupils of 1846 in spelling by 13 per cent, in geography by 16 per cent, and in arithmetic by 36 per cent. The Boston School Survey committee of 1845 carefully preserved the results of tests which were given to the "star" pupils in the Boston schools that year. Recently some parts of the same tests were given to 30,000 pupils of similar school advancement, scattered throughout the United States, and without regard to proficiency. The results showed that the pupils of today made an average score which was 8 per cent higher than the average score made by the pupils of 1845; and this too in spite of the fact that in 1845 pupils devoted the entire day to the so-called fundamentals while now only 52 per cent of the school day is devoted to them. In the Lincoln, Nebraska, schools spelling tests were given recently to school children and adults with the result that the school children out-spelled the adults who had had their schooling in the good old days of which the college president speaks. Wherever tests have been applied, we find that while the schools of today spend less time on "the fundamentals of an intellectual training," generally they achieve more. In addition to their superiority in the fundamentals they are developing an appreciation of and a proficiency in music, art, literature, home-making, manual-training, and sports.

The schools of today undoubtedly have better trained teachers. Fifty years ago the requirements for the certification of school teachers were few in number. The curricula were extremely meager and the methods of instruction were crude when compared with the curricula and the methods in a modern school. The proponent of the modern school may also point to the increase of the average span of life from thirty-three to forty-seven years within the last few decades and in the increase of comfort and leisure which have come to us as a result of a broader type of education.

After all of the facts have been presented both for and against an issue they must be carefully compared and weighed. To facilitate such a comparison the efficient judge may well arrange the arguments on intellectual training somewhat as follows:

Statement of the issue: The schools of post-Civil War days were superior to the schools of today in stressing the fundamentals of intellectual training.

Arguments for the statement.	Arguments against the statement.
1. Inability of persons trained in our present-day schools to do arithmetic, to read with understanding, to speak well.	1. Literacy in all parts of the United States higher today than sixty years ago.
2. Ignorance of the Constitution of the United States.	2. Superiority of pupils of today in all fundamental school subjects as shown by tests.

3. Dubious civic reactions, especially the failure of many to vote.	3. Training of teachers superior today, as revealed by higher requirements for certificates.
4. The teacher of the post-Civil War period, earnest and devoted even though not well trained.	4. Increase in the average span of life, as well as increase in comfort and leisure due to better schools of today.

Such an arrangement aids in visualizing the arguments and in comparing their relative value. The fair-minded individual will render his decision in favor of the side which presents the most numerous and the most convincing arguments, admitting, however, that more light on the statement may modify his decision. Should Dr. Butler make an answer to the arguments against his statement he might produce evidence to strengthen his affirmative assertions or to invalidate the arguments of the negative. Hence while the judge renders his decision he retains the privilege of reconsideration.

This example shows us how we may improve our judgment. Well-balanced judgment exemplifies: (1) A careful statement of the controversial subject; (2) An examination of all of the facts concerned, both for and against; (3) A weighing of the facts to enable one to arrive at a reliable decision; (4) The arrival at a definite conclusion; (5) The verifying of the conclusion or decision by further evidence.

1. A careful statement of the controversial subject. An analysis of the controversy is necessary in order to understand each succeeding step. If the premises[1] of our thinking are erroneous, our conclusions also will be erroneous. If we are to debate, we must be certain that the subject of debate has been clearly stated and that all concerned understand it. In the example stated above, it would be an easy matter to confuse or misunderstand the point at issue. Dr. Butler did not say for example, that modern education is inefficient and that we neglect character-building or the fundamentals of intellectual training. He did not say that the little red schoolhouse was better than our modern educational palaces. He did not say that he preferred poor equipment to costly equipment. What he did say was that the teachers and the school equipment and the philosophy of education of post-Civil War days, taken all together produced better results in character-building

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[1] A premise is a proposition which is *assumed to be true* and on which a conclusion is based.

and in fundamentals of intellectual training than teachers, palatial school buildings with costly equipment, and a modern philosophy of education, taken all together produce today. He implies that the difficulty is to be found in the present day philosophy of education. The point at issue is the relative efficiency of the schools of an earlier period in our history and of the schools of the present time. This relative efficiency can be found by comparing the results of the schools of those days with the results of the schools of today.

The first step, then, in our undertaking to increase the soundness of our judgment is to make sure that we understand exactly what is to be judged. Many people show poor judgment because they do not take this necessary first step. The pupil in arithmetic must note what is given before he can intelligently proceed to solve his problem. In college, the student must ask himself, "What did the instructor assign?" "Just what am I expected to do?" if he intends to arrive at satisfactory decisions about an assigned lesson. In any form of argumentation the listener or the reader must, first of all, understand the subject or the topic which is being argued.

2. Examination of all the facts, both for and against. The second step in our undertaking to increase the soundness of our judgments consists of a comparison of the two or more aspects of the controversial subject previously stated, analyzed and understood. In attempting to arrive at a fair judgment of one part of the statement made by Dr. Butler, we listed the arguments both pro and con on one of the two points of the issue. We suggested a series of arguments which might be advanced in favor of and one which might be advanced in opposition to the assertion that the schools of post-Civil War days were more efficient than the schools of today. The noteworthy element in this step is comparison. In order to make the comparison truly balanced several principles must be kept in mind.

It is essential that we confine our comparison of the pros and cons of a question to a common basis at each step. We followed this rule when we compared the quality of efficiency in the fundamentals of intellectual training of the earlier period with the same quality in our own period; in the preparation of the teachers during the earlier period with their preparation now; in the quality of the results attendant upon going to a red schoolhouse with poor equipment with that attendant upon going to an educational palace with costly equipment. If we had compared the proficiency in spelling of our modern school pupils with the proficiency in arithmetic of the pupil of Civil War days, or if we had compared the quality of character-building now with the quality of intellectual efficiency in the fundamentals then, our comparisons would have been unsound, because they have no common ground of comparison. Every judgment must result from a comparison of two things which have this same common ground.

The facts used in the comparison must also be fair. It is possible for the basis of comparison to be similar, but for one or even both of the bases to be unfair. In the example given Dr. Butler compares the work done in "the little red schoolhouse of the generation that followed the Civil War" with the work done in "many a costly and well-equipped educational palace such as may be seen in any part of the United States today." Such a comparison is not fair. The "little red schoolhouse" was a rural school, whereas the "educational palace" is a city school. The comparison would exemplify more fairness if the "little red schoolhouse" of the earlier era had been compared with the rural school of today, or if the city school of post-Civil War days had been compared with the "educational palace" of today. The comparison of the general literacy of people in post-Civil War days to the literacy of people today is fair. The basis of comparison is the same and there is an adherence to the conditions stipulated in the statement.

The comparison too must take account of specific and not merely general facts. The more specific the basis of comparison, the more reliable a judgment will result; the more general the basis of comparison the less reliable the judgment. Let us assume that we are attempting to determine the relative degrees of success of two millionaires. Both men have been successful. But since one of them has amassed more wealth than the other we may arrive at the conclusion that this one has been the more successful of the two. But there are other bases of comparison which ought to be taken into account. We should consider their relative positions when they started out. One of them, let us suppose, was born into a family of millionaires, and had a fortune to begin with. The other, on the contrary, was a poor boy with nothing at the outset but his own ability as capital. When we make our comparison on the basis of relative opportunity, the latter is far more successful. Similarly, if we had been content to examine Dr. Butler's statement on general grounds only, our conclusion at the end of our analysis, would have been too general to be very convincing. But by singling out certain elements involved in education we made the comparison specific, as for instance the literacy of the large mass of people of the two periods as revealed in their ability to read, and at the same time that we made the comparison more specific we made it more sound.

The fact that the basis of comparison must be as specific as possible suggests that we must also consider all the available facts in order to arrive at a reliable judgment. When Dr. Butler made his assertion, he may not have known many of the facts which were later presented against his argument. The truth is that most of the facts in defense of present day education were not collected until after Dr. Butler's statement was made public. The statement itself served as a stimulus to investigation in the educational world. Vague criticism of our schools was not unknown before 1920, but little heed had been paid to it until an authority like President Butler crystallized it in his *Annual Report*. Thereupon, comparative investigations began at once and brought to light many convincing and highly significant facts which it is difficult to assail. We may increase the reliability of our judgment, then, by making sure that our basis of comparison is similar, is fair, is specific and not general, and is cognizant of all the available facts.

Our ability to make just comparisons, and to weigh evidence can be greatly increased in several other ways. One of them is to increase our knowledge, to study the facts on either side; in short, to increase experience. To be able to pass judgment fairly in any situation implies that we know all the facts in the case. No judge would feel justified in rendering a decision in a case about which he did not know all the facts. No art connoisseur would be willing to pass judgment on a picture which he had not seen and about which he knew little. In a general way, the less one knows about a situation the less able is he to pass judgment on it, and, vice versa, the more he knows about a situation the more able he is to pass reliable judgment on it. Kilpatrick says, "Experience is the best educator. Actual experience is the richest evoker or suggester of meanings and at the same time the best and only final means of testing meanings."[1] The judgment of many people is thoroughly unreliable because they either ignore the facts in the case or they will not take the trouble to familiarize themselves with the facts. This lack accounts largely for the success of quack agents, quack advertisements, and even quack religions. Barnum, the circus master, once said that the American people like to be fooled. Lyman tells us that we spend $800,000,000 annually for quack remedies, "consuming more drugs than any other nation of similar size on earth, in spite of the fact that medical experts say that such remedies have little real value."[1] The fact is, people are inclined to act far too much on belief instead of on knowledge.

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[1] W. H. Kilpatrick, *Foundations of Method,* p. 221.

It is important at this point to warn against assuming that the facts which we use in our thinking are all infallibly true. Their truthfulness depends upon the accuracy of our observation, upon the nature and extent of previous experience that we bring to bear upon the interpretation of our observations, and upon our willingness to scrutinize with the utmost care and fairness the facts presented to us. How generally inaccurate much of our observation is may be illustrated by the contradictory testimony of witnesses at many a court trial. Although, for example, a number of people may see the same collision of two automobiles no two will agree on all of the details when they are asked to report what they observed. The writer has heard one witness of such an accident declare that one of the automobiles was travelling at the rate of forty miles an hour whereas another witness asserted that the speed of the same car was only fifteen miles an hour.

The testing of our methods of thinking during the last three centuries has revealed the untruthfulness of many "facts" which the human race had previously assumed to be true. We know now that the earth is round and not square and flat; that the earth revolves around the sun and not the sun around the earth; that storms and earthquakes are subject to nature's laws and not the expression of divine wrath; that diphtheria is caused by bacterial infection and not by diabolical visitation. Recent discoveries, like those of Einstein and Madame Curie for example, have cast so much doubt on the present knowledge of many things that the true scientist is hesitant to declare any fact absolutely true until he has subjected it to the most thorough scientific tests.

The implications of these statements are that students may increase the truthfulness of their knowledge by relying not only upon reading but also upon first-hand *accurate* observation and experimentation; by participating with spirit in all kinds of activities in school and out of school instead of assuming the attitude of passive recipients; by seeking opportunities to give expression to their ideas both orally and in writing; by developing a wide range of interests so that the fund of their experience may be enriched; by cultivating some skill that will give fuller expression to their capacities and thus test out their ideas; and, finally, by cultivating those qualities that will develop keenness of intellect. Each student should check his observations by looking at the same fact from different angles, by "stopping to think" while and after he makes observations, by associating new facts with those previously experienced, and by fitting effects to causes and vice versa.[1]

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[1] R. L. Lyman, *The Mind at Work.* Scott, Foresman and Company, 1924, p. 240.

3. Weighing the evidence. Weighing the evidence, or reviewing the case constitutes the third step in developing efficient judgment. The judge in the court of law first defines the case, then he listens to the evidence of both plaintiff and defendant, then he weighs the evidence before he renders a decision. This weighing of evidence either accompanies or follows the presentation of testimony; in most cases it does both. In a similar way, the student must be sure that he has a clear understanding of the controversy, that his facts are ample and reliable and that he weighs the facts on both sides before he attempts to arrive at a decision.

A word should be said at this point about what is called "snap" judgment. Such judgment is not always undesirable nor unreliable. Some facts are so patent that it would be foolish to spend much time weighing the evidence. Let us suppose that, while walking down the street, I come to a crowd of people. Hastily surveying the scene, I observe smashed automobiles, injured people, an ambulance. I am justified in concluding instantly that there has been an automobile collision. Such inferential judgment is exceedingly valuable. It shows a keenness in analyzing a situation and it reveals a certain amount of previous experience which is instantly brought into play without waiting to assemble a mass of proofs. Whence comes this ability in quick inference? We must not assume that it is inherited. If we could examine the early training of an individual who demonstrates an ability in off-hand or snap judgment, we would be likely to find a long series of judgments which were formulated only after painstaking analysis, careful presentation of facts and a thorough weighing of all the evidence. Unfortunately most people who make snap judgments have not experienced such thorough self-discipline. Therefore their judgments are not reliable.

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[1] For a more extensive discussion of the significance of accuracy and truthfulness of observation the student should consult Dr. Charles W. Eliot, *The Tendency to the Concrete and Practical in Modern Education,* pp. 49-55.

How may facts be verified or how may evidence be weighed efficiently? Lyman makes the following suggestions:

> In order to evaluate what he reads, a careful thinker needs to consider three matters: (1) he needs to estimate his own fair mindedness; (2) he needs to estimate the reliability of the writer; (3) he needs to estimate the value of the facts and the conclusions which he is asked to believe. Even more than a reader, a listener ought to be carefully on his guard. A listener, especially if he is carried away by a speaker's personal force or charm, is likely to neglect to analyze the value and credibility of the speaker's message.[1]

Stating the matter somewhat differently we may say that in weighing evidence we should judge by the following criteria: (*a*) fairmindeness; that is, we must guard against our own prejudices; (*b*) reliability of the facts and the persons who present them; (*c*) validity of the conclusions. Let us examine these criteria.

a. A fair decision is one that is without bias. If the judge is prejudiced and if he permits his prejudice to supplant or to supplement reason, the decision will be neither impartial nor fair. Prejudice literally means *pre-judge*, to arrive at a decision before the evidence is in or before it has been weighed. It means to make up one's mind in advance. It implies that one has a closed mind, a state of unwillingness to listen to both sides of an argument. Unfortunately, many of our decisions are biased. McMurry says that a fixed or unalterable attitude toward new knowledge is a serious barrier to progress. A shrewd recognition of this fondness of men for their early prejudices and their ingrained hostility toward any knowledge that threatens these prejudices, is shown by the boss politicians who count that from eighty to eighty-five per cent of all voters will "stand pat" and will vote according to party, no matter what facts they may learn against one candidate and in favor of another. This fact is what gives the bosses their security.[2] Most of us are members of a particular church or of a particular political party, not so much by personal choice as by social inheritance. We are what we are because our fathers were so. We still have the "straight ticket" and "Solid South" in politics, fundamentalism in religion, fetichism in social relationships, superstition in individual life. Landlords still find it hard to rent apartment number thirteen, it is still easy to get berth thirteen on a Pullman, some people still plant potatoes in the dark of the moon, many refuse to begin a job on Friday, and to others a black cat still exerts its potent influence on human behavior.

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[1] R. L. Lyman, *The Mind at Work*. Scott, Foresman and Company, 1924, p. 241.

[2] F. M. McMurry, *How To Study*, p. 224.

Bacon in his *Novum Organum* calls such prejudices man's Idols. He says:

> There are four classes of Idols which beset men's minds. To these, for distinction's sake, I have assigned names—calling the first class, Idols of the Tribe; the second, Idols of the Cave; the third, Idols of the Marketplace; the fourth, Idols of the Theatre.[1]

Headley elaborates these four classes as follows:

> *Idols of the Tribe* come from the nature of the human mind as such. Man is prejudiced in some of his judgments just because he is man. In his thinking he occupies what may be called a *homocentric position*—that is, a position in which the race of men holds central place. He sees from his human point of view and unconsciously assumes that the human interest is the standard of all things. Thus it has been supposed that the planet upon which we happen to live is the center of the universe, that our day and generation is the climax toward which all events of history have tended, and that all created things were made for the comfort and happiness of man. People judge the horse to be a beast of burden. Would the horse so judge himself if he had the chance? We say that the sun rises and sets and so gives us day and night. Would an inhabitant of Mars concur? Why do we call mountains large and grains of sand small? Why are some natural phenomena judged as blessings and rewards, and others as catastrophes and retributions? Are we justified in supposing that all created beings except man perish in death, while man lives on forever? . . .
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> *Idols of the Cave* come not from the nature of the human mind in general but from the peculiarities of one's individual mind. Being shut up in the cave or den of his own mind the individual sees the world only from this point of view. If man in general occupies a *homocentric position* then I, as an individual, occupy an *egocentric position*—that is, a position in which I hold the central place. We need not look far for illustrations of how powerfully personal bias influences judgment. "The cut of the cloth is upon each of us." Each is incrusted in his own cake of prejudice. Our likes and dislikes, hopes and fears, ambitions

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[1] Book II, aphorisms 39, 41, 42, 43, 44.

and failures, beliefs and doubts, possessions and interests, are ever with us. Through them we look upon the world. The merchant sees people as customers to be supplied; the teacher, as minds to be educated; the doctor, as bodies to be cured; the lawyer, as clients to be defended; the tailor, as forms to be fitted; the minister, as souls to be saved. . . .

Idols of the Marketplace arise from the intercourse which we have with other men in the market or wherever the day's work takes us. We all use expressions of opinion which we get from others. It is natural and right that we should. Only, while leaning on others, we should be conscious of our position. There is danger of mistaking the opinions, or what we assume to be the opinions, of others for our own. A good second-hand judgment may be worth more to you than a fresh one of your own creation. It is safer to accept the judgment of a good physician regarding your condition than to rely on your own. But the value of your admittedly second-hand judgment depends, in any case, on its inherent soundness, on its appropriateness, and on the way in which you accept it. If it comes as a mere collection of words or a statement so worn that its meaning is past recognition, if it does not bear on the situation to be judged, if, in grasping it, its meaning is distorted and garbled, a second-hand judgment, however valuable it may once have been, becomes quite worthless.

The "marketplaces" which most influence the student are instructors and books. Their judgments he is tempted to accept without question. In mulling over their thoughts he supposes himself to be exercising judgment on the topics of his lesson. One of the best ways for the student to free himself from the danger of mistaking judgments of others for his own is to restate in words of his own what he understands the opinion of author or instructor to be and then to decide whether or not he agrees with the position as he has stated it. . . .

Idols of the Theatre come not from daily intercourse with fellow men but from more formal teachings. Traditional systems of thought are "so many plays brought out and performed, creating fictions and theatrical worlds." The habits of the race are upon us. Because men have thought thus and so for ages past we continue to think so now. Outstanding examples are found in cases of people brought up to believe implicitly in some religious dogma or political policy. One who takes as literal and final the words in the first chapter of Genesis cannot make an independent judgment in the field of geology and allied sciences. To accept the Monroe Doctrine as the cornerstone of a national foreign policy is to determine in advance one's judgment on many a question of international relations. Here are a few assumptions, named almost at random, that sway the judgments of men: the doctrine of "private property" which asserts that wealth should be held by individuals rather than by the state; the doctrine of monogamy which asserts that the family as now constituted must be the basic unit of society; the doctrine of "divine right" which asserts that no dispossession or misconduct can annul the right of a monarch; the doctrine of "special creation" which asserts that each species of animal now living is the result of an original creation; the doctrine of protective tariff which asserts that infant industry should be shielded from foreign competition; the doctrine of "the white man's burden" which asserts that the white races are to be responsible for the dark races and to be their masters; the doctrine of "the Trinity" which asserts that three persons are included in the Godhead; the doctrine of gravitation which asserts that all bodies attract one another; the doctrine of fatalism which asserts that all things will happen as scheduled regardless of personal effort; the doctrine of evolution which asserts that the world in all of its parts is a growing organism.[1]

b. The reliability of the facts and of the persons who present the facts together comprise the second test to be applied in weighing evidence. For a century human society has attempted to increase the reliability of its judgments by setting up authoritative standards by which the evidence considered may be measured in such a way that everybody concerned may understand the basis of judgment. The following citation is a good example of how an authoritative standard may be abused:

> Is there anything amusing in the story of a public school in Porto Rico? The faithful teacher was ill and in her absence a girl from the United States (of America) was substituting for her. The geography class was studying Alaska, using an out-of-date text-book, which said Alaska's capital was Sitka. The substitute teacher said this was not true at the then present time, but that the capital had been changed to Juneau. But she could not convince the pupils. "The book says Sitka." She explained that a geography written several decades ago would describe Porto Rico as a Spanish colony, but that it is American. Still the pupils were unconvinced. It wasn't Porto Rico but Alaska that they were studying and "the book says" Sitka is the capital. Upon the return of their regular teacher the pupils told of Miss Jones's insistence that Juneau was the capital. The teacher, not wishing to discredit the friend who had so kindly substituted for her, had an inspiration as to a way out. Explaining again fully the teaching of the text-book and also Miss Jones's criticisms, she left the controverted point to be settled by the pupils by vote. The vote was unanimous that the capital of Alaska is Sitka. The story is not supposed to have any moral.[2]

Such a state of mind is extremely unfortunate. It reveals an undiscriminating worship of the printed page. Far too many persons, old as well as young, assume that because they see a thing in print it must be true. They accept it as true without question, and thus increase rather than decrease the unreliability of their judgments. Although books, magazines and newspapers have contributed an amazing amount to present day knowledge, nevertheless, much that is printed represents more error than truth.

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[1] L. A. Headley, *How To Study in College*, p. 212ff.

[2] M. M. Metcalf, "Authority." In *School and Society*, XXVI: 752-753 (December 10, 1927).

A more reliable basis for judgment lies in the field of exact measurement in which scales are generally accepted as standards of judgment. A scale represents a series of measurements usually graduated into equal intervals of length, quantity, weight, and so on. The foot rule, the yardstick, the dial on the clock, the speedometer on the automobile, the voltmeter for measuring electricity, the thermometer, the barometer, the compass, the weighing-scale—these are examples of commonly used measures. The careful use of these standardized instruments of measure makes judgment by them highly reliable. To say that I guess a stick to be fourteen inches long has little value, but to say that it is fourteen inches long because I have measured it with the yardstick, gives definite value to the statement.

The use of road maps, railroad guides, almanacs, interest tables, price lists and similar sources of reference in evaluating facts greatly increases the reliability of our judgment. So also does reference to experts in fields of human endeavor. The statement that grapes of one variety are more satisfactorily grown in a given region than grapes of another variety will mean much or little depending upon who says it. If an experienced horticulturist says so it will have the weight of authority. Similarly, the statement that a certain part of one automobile is better than the same part in another automobile will mean much or little depending upon who says it.

The wise student will hesitate to pass final judgment on any controversial or doubtful matter until he has examined it from every angle with the aid of the best available authority. If it is a book he should ask, Who is the writer of this book? What is his standing in his field? If it is a discussion by a lecturer he should say, Is this lecturer reliable? What is his rating in the field of knowledge from which he has chosen to lecture? Do the facts presented by him harmonize with facts given by other authorities? If it is a matter of social behavior, he should say, How may I know what is the correct thing to do? What standing has the source of information which gives me an answer? In short, the wise student will learn to search out the most reliable source of information available in each one of his perplexities. If his question is one of law, he will seek a well-trained lawyer; if it is a question of health, a skillful physician; if it is a question of investment in business, a mature and conservative business man; if it is a piece of jewelry, a reliable jeweler; if it is etiquette, an authority on etiquette; if it is religion, a well-known divine; if it is a question of learning, a thorough scholar. If each student will follow this simple suggestion of seeking advice from those who are recognized authorities, he will save himself much annoyance and maybe even his fortune and his life. Millions of men and women ignore easily accessible sources of reliable information. They go for advice instead to friends and acquaintances who know little or nothing about the matter under consideration, and act on the ignorant and sometimes deliberately misleading advice of quacks and nondescripts.

c. A third way to test the reliability of a fact, a statement, a book or an experience is to examine its credibility. Lyman suggests that we ask the following questions:

> (*a*) Are the statements presented quietly, moderately, and in a dignified manner? . . . A quiet, . . . straightforward, frank statement of fact or opinion carries a presumption of reliability. On the contrary, a loud, flowery statement, expressed in high-sounding phrases and garish terms, carries with it a presumption of unreliability. . . . (*b*) Do the statements agree with other established facts and conclusions? The outstanding example of the use of this test is found in an *alibi*. . . . A man cannot have been guilty of a physical act in California, if, at the known time of that act, he was in New York. The charge is inconsistent with known facts. . . . (*c*) Are the statements in accord with the knowledge of ordinary human experience? After all, our own general acquaintance with everyday life, based upon such contact as we have had with human experience, may be the best safeguard for our thinking.[1]

4. The arrival at a definite conclusion. The judge in court is at this point ready to render a decision, the thinker to draw a conclusion. If he has taken the previous steps with care he may rest assured that his decision will be reliable, that his judgment will be valid.

At the outset it should be noted that it is highly desirable that he should actually arrive at a definite decision or conclusion. Not to do so is in reality a decision also, but it is a negative one which marks the individual an uncertain and hesitant judge, and brings into question any later decision which he may make. To fail to make a decision naturally stamps an individual as indecisive and leads people expecting to find in him a source of reliable advice to seek other sources. The vacillating mind is perhaps as much a menace to the individual himself and to society as the closed mind. We discredit the individual who is tardy in "making up his mind." We admire and seek counsel of the individual who, after carefully collecting a wealth of facts from a wide range of experience, and sagaciously weighing their reliability and testing their validity, makes his just decision with promptness.

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[1] R. L. Lyman, *The Mind at Work*. Scott, Foresman and Company, 1924, p. 244f.

5. The verifying of the conclusion or decision by further experiences. Undoubtedly this habit of making a decision, of arriving at a conclusion is in itself helpful in developing reliability of judgment, for to find our conclusion discredited or disproved by later experience tends to increase our caution and our method of procedure. And we may rest assured that our conclusion will be put to the test if not by ourselves, then by others. The decision of judge and jury is often reviewed by a higher tribunal where each of the tests suggested in the previous steps is applied. In a like manner books, magazines, newspapers, lectures, discussions, public statements of whatever kind, are constantly being subjected to the rigorous challenge of public discussion.

We may here review briefly the tests which a student should apply to his judgments. Has the case been stated in such a way that everybody concerned understands it? Was the case, the statement, carefully analyzed so that there can be no ambiguity in succeeding steps? Were all the pertinent data taken into consideration? Was the comparison of the conflicting facts or statements made on a basis that was similar, fair, specific and complete? Were the pertinent data tested for their accuracy and their truthfulness? Was all evidence or were all facts carefully weighed? Was he, as judge, fair-minded? Was he prejudiced in any way? How reliable was his weighing of the evidence? Was it on the basis of personal opinion, or was it checked against the best available authoritative standards? Were the facts presented examined for their credibility? In this way the student must study the results of his judgments constantly to make sure that they are reliable.

A good way to verify one's judgments is to try them out whenever an occasion arises. The horse trader becomes expert because he is constantly judging the horses that he sees. It is a common experience to find salesmen of stock pointing out the desirable and undesirable features of cattle even when they are in no position to make a sale. Automobile dealers are always looking for talking points and these must represent reliable judgments. A salesman observes both the strong and the weak points of the products of his competitors. His judgments make his selling points. So it is with all of the activities of life. Those who represent the best judgment have generally had much practice in judging.

SUMMARY

Reliable judgment is one of the most valuable abilities which a student can develop. Reliable judgment consists partly of insight which is largely native, but more of reasoning ability which is cultivated.

The best way to develop reliable judgments is to begin by collecting pertinent facts through living an active and observant life which brings a wealth both of first hand and of vicarious experience. We must develop also an ability to hold in abeyance our decisions until we are certain that we understand thoroughly the situation on which we are asked to pass judgment; until we have at our disposal all of the available facts which may be presented in support of every viewpoint involved; until we have carefully weighed these facts, particularly by checking them against the best existing standards of authority. After we have done all of these things it is important that we render a decision and come to a conclusion. But the decision or conclusion should never be viewed as final; instead every decision or conclusion should be tested in the crucible of subsequent experience.

QUESTIONS

1. Show that judgment is a type of thinking. What evidence is there that it is a high type of thinking?
2. Why is good judgment so valuable?
3. What are the essential elements in judgment? How does Dewey's analysis help one to discover these elements?
4. Name the five steps suggested in this chapter for increasing the reliability of our judgment.
5. How does the discussion of Dr. Butler's statement on the efficacy of modern education illustrate the five steps? Do you find any weakness in the argument on either side?

6. By an example from your own experience in which you arrived at a valid decision show how the five steps were exemplified.
7. What principle should be kept in mind in considering evidence? How may the accuracy of facts be increased?
8. Justify and condemn snap judgment.
9. When is a decision fair?
10. Name Bacon's four classes of Idols and show how they influence judgment.
11. How may the reliability of a decision be increased?
12. Why should judgments be tested by further experience after a decision has once been reached?
13. How has this chapter helped you to make your judgments more reliable?

EXERCISES

1. What is meant by "jumping at conclusions"? How may one overcome this tendency?
2. Some people refuse to make an important decision until they have "slept over it." What advantages do you see in this practice? What objections may be urged against it?
3. Visit a session of court, preferably a police court, and note how many of the five essential steps are in evidence.
4. Why are state and national supreme courts usually manned by older and broadly experienced men? Why do most people prefer an old doctor to a young one? Why do most people prefer a young preacher to an old one?
5. What evidence can you present to prove that we Americans need training in arriving at reliable judgments? Do you agree with Barnum that the American people like to be fooled?
6. In each of the following exercises proceed as follows: first, read the passage; second, write down your off-hand reaction; third, apply the standards set up in this chapter; fourth, arrive at a decision based on this procedure.
    (a) The simple fact is that municipalities and states are finding the rising cost of their educational budget a most difficult and serious problem. It is perfectly clear that if the demands of the schools continue to increase at the present rate, or, as seems more probable at an increased rate, the financial inability of society to pay the cost will in a measurable time bring radical curtailments. In no distant day we shall see, under these conditions, free public education endangered.

(H. S. Pritchard in *Seventeenth Annual Report.* Carnegie Foundation, 1922, p. 94.)

(b) We are a religious people, but our schools are irreligious, repressing the spiritual element in education through fear of offending sectarian prejudice.

(Frank D. Stutz in *The American Educational Digest,* Feb. 24, 1924, p. 243.)

(c) The most outstanding feature of recreation in the United States is the relative absence of the rich folk-life which is so characteristic of the older civilization. There is a cultural barrenness about the American community that challenges attention. It is this spiritual poverty that has called forth from the adverse foreign critic the unflattering comment that America lacks a soul. America is peculiarly the land of the cinema, the local chautauqua, the athletic spectacle, and the circus. The fundamental fact is that the American people are not genuinely interested in literature, music, and art. The whole trend of our civilization is toward the practical, the useful, and the remunerative.

(J. C. Chapman and G. S. Counts, *Principles of Education,* p. 305f.)

(d) Glorify the old bus with one of the eight snappy Effecto enamel colors! Just brush it on as best you can and forget it for a day or two. Then drive out your car with a smooth, lustrous surface that wears longer than the finish on most new cars Effecto dries quickly and flows freely, without streaks, laps or brush marks.

(An ad in the *American Magazine* for April, 1924.)

7. Examine the advertisements of automobiles in several standard magazines. What typical appeals do you discover?

8. Some persons say that movies are highly immoral. Others say they are educative. How do we arrive at such contradictory conclusions?

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3. Headley, L. A. *How To Study in College.* Henry Holt and Company, 1926. Chapter VIII: "How to Judge." The nature of judgment, kinds

of judgments, how to improve judgment. An excellent discussion of the nature of prejudices.

4. Lyman, R. L. *The Mind at Work.* Scott, Foresman and Company, 1924. Chapter VI: "Evaluating What We Hear and Read." Two excellent sections on "Pitfalls in Thinking."
5. McMurry, F. M. *How to Study.* Houghton Mifflin Company, 1909. Chapter VI: "Judging of the Soundness and General Worth of Statements as a Factor in Study." A practical presentation of the problem of developing reliable judgments.

CHAPTER XIII

MEASURING ACHIEVEMENT

The law whereby every act is followed by its own inevitable consequence is one of nature's unalterable laws. Among men praise and blame constitute two of the great regulators of human conduct. One of our philosophers of education asserts that nothing succeeds like success and nothing fails like failure. Prizes, honors, and rewards are everywhere bestowed upon those who achieve. Social and political ostracism, to say nothing of more drastic punishments, frequently await those who violate the laws of human society. Even the religions of the world, without exception, conceive of a place of final reward, heaven, and of final punishment, hell.

Nature's laws being inexorable, she makes her own system of punishments. She decrees that he who obeys her law shall reap his due reward, and that he who violates even the least of her laws must pay the last farthing. Human society from early times has consistently attempted to make its laws as inexorable as those of nature. Every tribe and nation has a ponderous machinery for the detection, trial, and punishment of criminals, besides honors and rewards for those who achieve much.

THE SYSTEM OF SCHOLASTIC REWARDS AND PENALTIES

With such a system of rewards and punishments current among the peoples of the earth, it is not hard to understand how education has instituted a similar system by which excellent scholarship may be rewarded and delinquency punished. The rewards take the form of high marks for exceptional scholarship, as well as prizes and honors for successful achievement both in scholarship and in extra-curricular activities; the punishments take the form of denial of privileges, suspension and even expulsion for failure in scholarship and for anti-social conduct. Along with this system of scholastic rewards and punishments education has developed certain methods of determining the quality of scholastic achievement.

For years before coming to college the student has been familiar with at least one of the two or three marking systems in general use. The system of marking used in college, he will probably find, is not greatly dissimilar from that used in high or preparatory school. The system most generally used in colleges is the percentage system in which the perfect score is 100 per cent. The typical test for determining a percentile grade consists of ten questions each worth 10 per cent. If a student answers eight of the ten questions correctly, he receives 80 per cent. Usually the college indicates the upper three decades as rating the degree to which a student's classwork is satisfactory, besides setting a minimum mark below which his grade must not fall if he is to receive credit in the course. The University of Nebraska has set 60 per cent as this minimum or "passing" mark. A student may be given a C—meaning "condition"—for a grade between 50 and 60 per cent if the instructor feels that he is entitled to a second final examination. Grades between 60 and 70 per cent are considered poor; those between 70 and 80 per cent fair; between 80 and 90 per cent good; and between 90 and 100 per cent superior.

Another system used widely by colleges is the letter system. Instead of receiving a percentile score the student receives a letter. Usually the letters A, B, C, D, E, and F are used. The first four generally indicate that the work is acceptable, with E meaning "conditioned" and F "failure." The letter E must either be changed to a passing mark by additional work on the part of the student or it automatically becomes an F.

A third system, more generally in use in graduate schools than in under-graduate colleges is the pass-fail system. By this system the instructor merely indicates whether the student has passed or failed.

There are a few colleges which give marks to students for unsatisfactory work only. At the end of a course the instructor sends his marks to the registrar's office where they are recorded. If the student is doing satisfactory work, no report is sent to him; but if his work is unsatisfactory, he is called to the office where his grade is given to him and his work is reviewed.

In addition to high marks, other rewards are frequently offered by colleges for classwork of exceptional quality. These consist of scholarships, money prizes, honors and special privileges. A scholarship may exempt a student from the payment of fees and tuition, or it may give him an opportunity to earn money by reading examination or test papers or by doing some other work for an instructor, or it may yield a stipend outright without any demand for services in return. Money prizes are frequently offered through the college by philanthropic individuals or organizations to those whose scholarship is exceptionally high. Honors may consist of membership in scholarship societies such as Phi Beta Kappa or Sigma Xi, of an opportunity to appear at Commencement as valedictorian, salutatorian, or special orator, of a medal, and of a fellowship, the last being usually a recognition of extraordinary merit. Special privileges may include being excused from regular class work in order to carry on independent reading or research, being excused from tests and examinations, being allowed greater freedom in one's choice of electives, and being granted a special opportunity to do advanced work in a single department or field.

In recent years certain colleges have developed "honors" courses which are open only to those students who have demonstrated special ability in scholarship. Such a course usually consists of highly concentrated research in a particular field. The object of honors courses is to give a talented student an opportunity to specialize in a chosen field and thus become expert in it.

This system of rewards for superior achievement is paralleled by a careful grading of penalties for inferior and delinquent achievement. Each college has its own method by which to discover, warn, put on probation, suspend, and expel students because of inferior scholarship or anti-social conduct. Many colleges formulate one or more reports each semester on the conduct and class standing of each student. Those whose scholarship is below the required standard are thus brought to the attention of the college at least twice a year. Usually if the student is delinquent in two or more courses, he is first warned that his scholarship is not satisfactory; if his work does not improve he is asked to explain his delinquency; if his explanation is accepted, he is placed on probation; but if his delinquency continues he is either suspended for a semester or a year, or he is expelled.

Opinion as to the value and reliability of this system differs widely. Those who support it say (1) that it is in harmony with the accepted practice of rewards and punishments current outside of the classroom. Since nature and society operate on a system of rewards and penalties, the college should train its students to expect rewards for success and punishment for failure in achievement by operating on the same system; (2) that it stimulates many students to do a higher quality of work than they otherwise would, because the passing of one's tests and examinations and the offering of satisfactory daily work are requirements which underlie nearly all college activities; (3) that it represents the surest means that we have of predicting the probable success of the student either in college or in later life. The student should reread the section on Scholarship and Personality in Chapter III for evidence to substantiate this contention; (4) that it is necessary for the evaluation of the abilities and achievement of the student. This evaluation, the supporters of the system say, is demanded by college authorities, by parents or guardians, and by employers. Because of this demand every college maintains a registrar's office where the scholastic standing of students is recorded and preserved. Not only is a student's classification as freshman, sophomore, junior or senior determined by the number of credit hours which he has earned, but the granting of a certificate, a diploma or a degree requires the completion of specified courses and a certain number of credit hours. By this system also, the natural wish of parents to know how well their children are progressing in their college work may be met by a definite report at the end of each term or semester. The employer too, who seeks the services of young men and women of high scholarship may visit the registrar's office to scrutinize records or have the registrar send a transcript of the scholastic records of those students whom he hopes to employ. All of these features are put forward by those who uphold the present system of scholastic rewards and punishments.

Opponents of the system insist (1) that the criteria for determining scholastic rewards and penalties are not reliable because too much depends upon the opinion of the instructor; and (2) that the present system is conducive to the development of undesirable habits.

1. The contention that marks are unreliable is based upon the wide variation in the marks which the same or different instructors give for similar or even for identical work. Dearborn found that of two instructors in the same high school department, one gave 43 per cent of his students the grade of excellent, none the grade of failure; the other gave none the grade of excellent and 14 per cent the grade of failure.

Starch and Elliott sent two sets of examination papers in English written by first year high school pupils to be graded by 142 teachers of English in high schools accredited by the North Central Association of Colleges and Secondary Schools. On one of these sets in which the answers were identical the grades ranged from 64 to 98 per cent, and on the other set, also identical, from 50 to 98 per cent. They sent out also a set of final examination papers in geometry, the answers identical, to be graded by 138 teachers of geometry in high schools accredited by the North Central Association. The grades on these papers ranged from 28 to 92 per cent.[1] Variation in grading appears also among college instructors; on one set of identical examination papers graded by instructors in the University of Wisconsin the grades ranged from 40 to 97 per cent.[2] A committee at the University of Nebraska found the following variations in grades in the same courses:

	%	%	%	%	%
Department I	90-100	80-89	70-79	60-69	FCI[3]
Instructor A	7	93	0	0	0
Instructor B	7	17	47	15	14
Department II					
Instructor C	58	38	4	0	0
Instructor D	2	16	31	30	21

Opponents of our scholastic system of rewards and penalties assert too that in college the same student may do a large amount of work of satisfactory quality and receive a low grade at the hands of one instructor, while he may do little work of a poor quality for which he receives a high mark from another. Evidently instructors vary widely in their idea as to the quantity and the quality of work which should be done for a specified grade.

2. A more serious criticism directed against the system, however, is the assertion that it develops undesirable habits. The essay type of examination and the question-answer type of recitation, so its opponents assert, are objectionable because they lead the student to feel that doing the task set constitutes the ultimate end of his study. To succeed honestly or even dishonestly implies achievement, and the reward

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[1] D. Starch and E. C. Elliott, "Reliability of the Grading of High-School Work in English," *School Review,* 20:442-457 (September, 1912). See also *School Review,* 21:254-259 (April, 1913).

[2] D. Starch, "Reliability and Distribution of Grades," *Science,* 38:630-636 (October 31, 1913).

[3] F C I indicates those who received a Failure, a Condition or whose work was Incomplete.

that is consequent upon it. This is likely to develop the "get-by" attitude which assumes that the object of class work is to accumulate credits instead of to increase knowledge.

Any system of marking is compelled to recognize the natural limitations of the teacher in assigning classroom tasks. There are some learnings which cannot be set as tasks and hence they cannot be tested. The knowledge of this fact tends to encourage those who teach to measure the scholarship of their students by those learnings which can be tested while seeming to ignore those others which cannot be tested. The development of an appreciation of good literature, for example, is greatly to be encouraged, but it cannot well be assigned as a task, nor can it be subjected to a test. For many years teachers of English literature have set definite tasks in which they have asked their students to learn the names of certain poets, when they lived and wrote, and the facts, detailed or otherwise, of their lives. They have assigned other tasks, also, involving a study of specified poems; they have exacted the learning of lines and passages, the looking up of words and phrases, of allusions and figures of speech, the analyzing of rhyme schemes, and of the stanza forms employed. All of these things are tangible and can be assigned as lessons, and the degree to which a student has learned them, can be tested. But to be certain that through such a study a student has developed a genuine appreciation of fine poetry is quite another matter. If as a result of such an intensive study of a poet and his work, the student has not reconstructed his intellectual and emotional experience in the realm of poetry, then he cannot be said to have acquired any true literary appreciation from that particular study.

How very mistaken one's conception of education may become is revealed by an incident which occurred recently at the commencement exercises of a large university. A member of the senior class had barely succeeded in making his credits and there was still some doubt about his receiving a diploma when commencement day came. After the exercises were over, he eagerly examined the roll in his hand and found that he really had received his degree properly signed and sealed. Thereupon he exclaimed with delight, "Thank God, I am educated!"[1]

These arguments for and against the existing system of scholastic rewards and penalties should make clear to the student the fact that the real object of his scholastic endeavor is learning rather than the mere earning of marks and credits. It can be demonstrated that those students whose aim is to secure marks and credits at a minimum expenditure of effort and time without any serious attempt to learn are likely to fail in both learning and credits, while those whose serious aim is to extend their learning acquire not only learning but credits. And it has been conclusively shown further that students who consistently make excellent marks in college as a rule attain a higher degree of success in life than those who make low marks.

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[1] The student will find an able presentation of the objections to our system in W. H. Kilpatrick, *Foundations of Method,* Chapters VIII and IX; and in H. C. Morrison, *The Practice of Teaching in the Secondary School,* Chapter III.

The student will be interested to know that our colleges are attempting to meet the objections to our present system of scholastic rewards and punishments. There is a widespread effort on the part of instructors to objectify their work by increasing the usefulness of the subject matter of their courses, by improving their method of presentation, and by making tests and examinations more definite and objective. It will be our purpose in the succeeding section to discuss the types of measurement now in use in colleges so that students will understand their use and purpose.

SCALES FOR MEASURING SCHOLASTIC ACHIEVEMENT

There are still in use for measuring a student's learning, several classroom devices which have been used by teachers and instructors for many years. In addition there are a number of new ones which seem to be more nearly in harmony with current educational psychology and philosophy but are still in the experimental stage. Of these devices for measuring a student's achievement we shall discuss ten, both old and new, that are in use in colleges today.

1. The recitation is perhaps the oldest and certainly the most widely used of these scales by which to measure learning. The instructor calls upon the student to recite—that is, to say again—what he has read, heard or observed at a previous time. This reciting may be done by giving the exact words of the source of information or by giving the facts exactly as they were observed. In the true recitation the student is not expected to give his own opinion nor to pass judgment on what he has read or seen.

If the material to be recited is selected on the basis of the use that the student will be able to make of it or on the basis of some supposed favorable effect on the student, a certain amount of reciting has some value. But there is a danger that by following this method a student may become a mere parrot, learning by rote what is assigned, reciting it back to the teacher in class and assuming thereupon that the proficiency with which he does this will contribute to his learning and eventual success. Such memory work calls for little or no original or independent thinking. When there is no grist to grind, he finds himself at a loss as to what to do. His initiative is not aroused, neither are his originality, independence in thinking and action, nor his judgment—not one, in short of these valuable qualities needed by a citizen in a democracy is called into play.

2. The discussion is a modification of the recitation. It differs from the recitation in that it gives the student greater freedom in his response to a given assignment, question or topic. Instead of being asked merely to say again the words he has read or to repeat exactly the observations he has made, he is both permitted and encouraged to express his own opinions on what he has read and observed. His opinions may either agree or disagree with the opinions expressed by others, perhaps even by authorities on the subject under discussion. The discussion is used widely where the topical method prevails. It seems clear that the discussion is superior to the recitation in that it offers the student an opportunity to state in his own words his reactions to what he has read. To that degree it allows opportunity for originality, initiative and practice in forming sound judgments. The chief objection to it is that teachers are prone to put the emphasis upon facts rather than upon personal reactions to facts. They welcome more a formal reaction to an assigned topic than the impression of an independent idea springing from a primary and original reaction.

3. The written theme or report is a type of measurement which has come into common use because instructors feel that there are some students who are better able to demonstrate how fully they are profiting from their study if they are given an opportunity to prepare something outside of the classroom and to present it in written or oral form to the instructor or to the class. In such a theme or report the student is given a chance to show his ability to collect, to organize, and to present in clear form facts or ideas which are worthy of serious consideration.

In favor of this method of measurement it may be said that it gives the student a certain degree of freedom in selecting what he shall learn and how he shall present it. He must make a choice in the selection of his source material, he must exercise judgment in the selection of his data, he must show what ability he has to organize and clearly set forth his conclusions. If he is to give his report in class he must school himself to present it convincingly before the group of his fellows. Undoubtedly college students who are seriously interested in their study greatly prefer this type of measurement over those previously discussed. The chief objection to it is that it may be made fully as stereotyped as any form of testing. References may be specifically assigned, the pertinent facts which the student should find for himself may be suggested by the instructor, the form of the report may even be outlined and the manner of reporting may be specifically predetermined. Under such an arrangement the student's spontaneity, originality and individuality have small chance to function.

4. The quiz is a more exact type of measuring achievement. By "quiz" is usually meant a short test covering a daily assignment or a small segment of a course. The chief purpose of the quiz is to enable the instructor to find out whether the student has mastered the immediate assignment, and whether he has placed it in its proper associations. It gives the student too an opportunity to repeat what he has learned, at the same time that it gives both instructor and student an opportunity to make sure that each has understood the other. Besides serving as an incentive to the student to keep up his daily work and to attend his class regularly, it enables him to clinch the essential features of the course by highly attentive repetition. The quiz, like the recitation and the discussion, is valuable provided that the facts to be mastered in a course have unquestionable value and deserve to be fixed. The chief objection to all of these three types of measurement is that the emphasis is too largely put on facts mastered or on tasks performed rather than on the cultivation of desirable thought habits.

5. The written examination is an extension of the quiz and usually covers either a large segment of the course or the course in its entirety. Instructors who use the written examination expect the examination questions to test the student's ability to recall, to organize, and to express in good English his knowledge of and his reactions to the subject in which he is being examined. In common practice, the questions are ten in number, and the examination may extend over a period of

two hours or longer. At the University of Nebraska an entire week is set aside at the end of each semester for final examinations.

The written examination may require the student (1) to report facts which he has learned by reading references or listening to lectures or both; (2) to organize such facts, thereby demonstrating both his knowledge of the facts and his ability to arrange them logically; and (3) to apply the facts to new situations. Sometimes an examination may cover in great detail a small unit of the course. If the student shows a mastery of this unit the instructor assumes that the student has mastered the entire course. At other times an examination—called the essay type—may consist of general questions and cover a much wider area. In answering such questions the student must demonstrate his ability to summarize many units of the work of the course in a few minutes.

The examination is thought to be valuable in the first place, because it informs the instructor how much knowledge of his course the student really possesses. At the same time it reveals to the instructor any difficulties which the student as well as the class as a whole may have had with the course. In the second place an examination makes clear to the student how nearly he is doing the required work of a course and it may enable him to discover his own deficiencies or superiorities. In the third place, an examination may serve as an incentive to good work. In some instances the prospect of an examination may amount to a whip to urge along an otherwise lazy student, for if he knows that there is to be a day of reckoning at the end he is likely to keep up a more sustained effort than otherwise. In the fourth place, an examination enables the student to demonstrate his ability to organize facts. During the progress of the course he has learned a little here and a little there, and unless the instructor has been careful to organize clearly the material which he has presented, the student will nowhere, except in the final examination, bring together these learnings into a unified whole. In the fifth place, an examination may serve as a barrier to those who have not done their work well enough to go on with the course. Instructors frequently let the need for eliminating students from college or from participating in extra-curricular activities determine them to make their examinations very hard.

Undoubtedly examinations actually do much that they claim to do. But certain pertinent objections may be raised to their present widespread use. First of all, the instructor can never adequately test the facts of an entire course by an examination two or three hours in length. He must either ask students to tell in some detail about a very few specific points in the course, or he must make his questions so inclusive that the vaguest kind of an answer may be given. If he elects the former procedure, the examination will represent a mere sampling and it will not therefore be a fair test. If he decides on the latter procedure the examination can hardly be definite enough to test any real learning derived from the course.

A second objection to the written examination—to the essay type examination in particular—is that it is difficult to score fairly or impartially. When questions are general, answers will be general and the scoring may be unconsciously biased and unfair. A third and final objection is that no written examination can reveal either the strength or the weakness of the course, either the ability of the instructor to present his subject or the grasp of the student. Indeed the marking of examination papers is in general practice not often for the purpose of discovering on the part of the instructor, any weaknesses that may exist in his course so that he may remedy them, but is more frequently for the purpose of enabling him to determine who is to pass and who is to fail in the course.

Examinations are used not only for school purposes but also as tests of fitness for certain undertakings. For example, teachers are frequently required to pass examinations for certificates, employees in the civil service are chosen on the basis of the results of civil service examinations, and students are admitted to many institutions of learning only after they have passed an entrance examination.

The foregoing five scales of measurement have all been in use in American colleges for many years. But recently we have evolved at least five new measuring devices which are more objective than those that we have discussed.

6. The first of these is the enumeration test. In such a test, students are asked to write, following specific directions or in answer to specific questions, a very definite series of facts or statements which they have been expected to learn in the course. Discussion or explanation is not required. The following are typical of an enumeration test:

a. Give Dewey's five steps in problem solving.

b. Give six rules for improving comprehension in reading.

c. What are two points of similarity in the deductive and inductive methods? What are two points of dissimilarity?

The chief advantage of the enumeration test is that it affords an opportunity to the instructor to test the knowledge of his class covering a wide range of facts, of analyses of situations, of comparisons of experience, and the like. The writer's students have answered as many as fifty such questions in a period of fifty minutes. The chief objection to this type of test is that it may focus the student's mind on facts, analyses, and comparisons which have little or no value.

7. The completion test is a somewhat more difficult one than the enumeration test. In this the instructor makes a series of statements covering the subject-matter dealt with in the course, omitting in each one an important word, name, or phrase which the student is expected to supply. The following are examples of such exercises in a completion test:

a. As a rule rapid readers comprehend ________.

b. The English general ________, and the French general ________, were both killed in the Battle of Quebec.

c. $76 + \underline{\qquad\qquad} = 98$.

Among the advantages of this type we may list the following: (*a*) It is not a difficult test to make in any class subject. In an hour or two an instructor may prepare a hundred excellent sentences in which he has omitted crucial words or phrases. (*b*) It emphasizes proper mental associations. If the student has done his learning in the right way he will not need to memorize many facts, because correct associations will give him the response that he wants. (*c*) It is easy to give. Students can fill in a large number of blanks in a short time.

Certain objections, however, are to be made to this kind of test. One is the fact that if the instructor has not been exceedingly careful in wording his sentences he may find that his students have filled the blank in a given sentence in a variety of ways, more than one of which may be correct. The instructor must be sure that the word or phrase which he omits is the only one that can be correctly fitted into the place left blank for it. Since the blank in example *a* above might be filled in correctly by either "much" or "well," it is therefore not a perfect test. But example *b*, in which one name and one only can be correctly placed in each blank, Wolfe in the first and Montcalm in the second, is therefore perfect. Another objection to the completion test is that while it is easy to assemble such exercises, the instructor cannot always be certain in advance whether it is too easy or too difficult for his students.

8. The so-called true-false test is another objective type of measurement. Sometimes it is called the "right-wrong" or "yes-no" test. It consists of a series of statements part of which are absolutely true and part absolutely false, the true and the false being usually arranged in irregular succession. To an instructor such a test is valuable because it brings out a wide variety of reactions from his students. If the test is constructed skillfully the student may be compelled to muster all his knowledge of a course. If the statements are of reasonable difficulty as many as three hundred may be marked in a two hour period. The marking consists of placing a plus sign or writing the word "right" or "yes" immediately in front of each statement which is true, and a minus sign or the word "wrong" or "no" immediately in front of the statement which is false. Some instructors score by the formula R-W—that is, the number of right answers minus the number of wrong ones equals the score. Others take the number of right answers as an index of the student's ability. This type of test is easily administered and scored. It emphasizes thinking rather than mere memorizing.

The chief objections to this type of measurement are that it encourages guessing and that it frequently contains debatable statements. It is possible, although not very probable, for a student to guess the correct responses to all of the statements in a true-false test. This chance of making correct guesses tends to discourage careful reviewing for an examination. The instructor may, however, put his statements in such a way that the student will need to demonstrate his actual mastery of the subject matter. The following statements are examples of true-false statements:

+ (*a.*) Inaccuracy in observation naturally leads to fallacious thinking.

— (*b.*) If Americans investigated every new scheme before investing in it, they would not spend so much money.

— (*c.*) By the term I. Q. we refer to the achievement of pupils in school subjects.

+ (*d.*) The third step in the Dewey problem-solving analysis is "Suggesting solutions."

? (*e.*) The Volstead law is not enforced well in the United States.

? (*f.*) The most besetting fault of men and women is that they do not think what they think; they think rather what they think others think they ought to think.

— (*g.*) All thinking is study and therefore all study is thinking.

— (*h.*) The best philosophy of a college student is to accept the perfect rule, Do unto others what you would have them do unto you.

These statements will reveal several of the characteristics which the student may expect to find in a true-false test. The first statement is absolutely true, the second is absolutely false. In the latter we have the glib conclusion, "they would not spend so much." On the surface this appears to be a logical conclusion, but upon examination it will become evident that more care in investment in new schemes is no guarantee of spending less money. Spending is desirable if it be wise, and we are not so much desirous of a decrease in spending as such, as we are in spending money for unreliable securities.

Statement (*c*) is absolutely false. I. Q. means Intelligence Quotient and represents native mental capacity computed from scores based on intelligence tests and compared with the mental and chronological age of the person being tested. Since the intelligence test attempts to measure native mental capacity and not acquired mental ability the I. Q. does not represent achievement in school subjects, and the statement is consequently false. Statement (*d*) is true. Statements (*e*) and (*f*) are debatable. There are probably many proponents of the Volstead law who would mark statement (*e*) minus, while most of its opponents would mark it plus. The statement, therefore, is an opinion and not a verified fact.

In statement (*f*) the answer hinges on the adjective "most." This practice is undoubtedly a besetting fault, but whether it is the most besetting fault of men and women, is questionable. The statement is therefore probably "false," although a good defense could be offered for it. The statement could be improved by changing the phrase, "The most besetting fault" to "One of the most besetting faults." Then the statement would be absolutely true. In statement (*g*) we have two assertions, one of which is true, the other false. Students are sometimes puzzled to know what to do with such double statements. The instructor should always explain that if any part of a statement is false, the statement as a whole is false and should be marked minus. In order to deserve the plus mark, a statement must be true in every respect.

Statement (*h*) is false. It represents a type of statement which is usually marked true. This particular statement was given to a class of college freshmen and 379 out of 412 marked it true. It can be demonstrated rather readily that the dictum, "Do unto others as you would have them do unto you," is not a perfect rule. Vote trading in legislative bodies, doing friendly acts in order to put others under obligation to do friendly acts in return are two examples of a flaw in this as a rule of conduct. The practice of striking from one's Christmas list the names of friends who have failed to send gifts is another. "It is more blessed to give than to receive" is a long step in advance of the so-called "golden rule." The explanation of the large number who marked this statement true is to be found in the traditional prejudice in favor of the "golden rule" as the perfect measure for conduct. The training of years suddenly impels a response which on careful examination would be admitted to be erroneous.

In marking true-false tests then, the student should be particularly on his guard against glib statements which on the surface seem to be logical; against statements in which there is part truth, part falsity; against statements which agree with his prejudices, but which may be proved to be wrong by reasoning; against statements whose truth or falsity depends on a single adjective or adverb. He should also be on the lookout for statements which are undoubtedly debatable and should mark them so.

9. The multiple-response type of measurement forces the student to demonstrate his ability to select the right response from among a number of responses, only one of which is correct. A statement is given, incomplete in one important word or phrase; following it several possible words or phrases are listed, from which the student must pick the right one to complete the sentence. By placing an *x* before the word or phrase which seems to him correct, he completes the sentence. The following will serve as examples of the multiple-response type:

a. The first study activity in which small children engage is:

  1. reading.
x 2. observation.
  3. meditation.
  4. reasoning.

b. Students should form the habit of careful and serious study early in life because

1. They will be able to get up earlier in the morning.
2. They will understand better what their teachers tell them.
3. There is no royal road to learning.

x 4. Serious study is the best promise of success in school and life.

This type of measurement aims at testing one's ability to reason and especially to arrive at sound judgments, rather than his ability to memorize. In marking such a test the student must be careful not to mark as true statements which are plausible only on the surface. A student may clearly demonstrate his sound judgment and reliable reasoning of which we have spoken previously, in this type of test.

10. The association type, sometimes called matching, gives the student an opportunity to reveal his ability in making logical associations. This type of test may be used where there is a natural connection between any two facts. The test consists in giving in one column one set of facts and in another column another set from which latter column items are to be selected to match the items in the first column. The following exercise will serve as an example of the association test. The student is expected to place before each fact in column II the number attached to the clause in column I which most definitely suggests it.

I

1. Life giving units of food.
2. Relating new experiences to old.
3. Learning ideas instead of words.
4. Learning beyond the point of immediate recall.
5. Receptive powers.
6. Predicting from facts at hand.
7. A method of increasing reliability of judgment.
8. Extent of a unit of understanding in reading.
9. Learning many facts in a course in one sitting.
10. Scheme for improving efficiency.

II

Inference.
Whole method.
Comprehension span.
Time schedule.
Using standards of reference.
Cramming.
2—Association.
Overlearning.
1—Vitamins.
Capacity.

This type of test is particularly valuable in the social sciences, in the acquisition of English and foreign language vocabularies—in fact in any subject in which associations need to be made.

SOME GENERAL SUGGESTIONS ON PREPARING FOR TESTS

Students are generally more concerned to know how to pass examinations than to understand their nature and purpose. The following five suggestions may be of service to the student in preparing for tests and examinations.

1. The first suggestion emphasizes the value of faithful daily work. Without doubt the best preparations for any test are steady daily work throughout the course, a thorough understanding of its subject matter and attention to those reactions which will probably be called for in the test. Kitson declares that the student's first duty is to work faithfully throughout his course. He condemns the practice of some students who consistently slight their daily work and then by vigorous cramming at the end of the semester try to make up for their neglect and pass the examinations. He says that it may work with certain kinds of subject-matter, a certain kind of student, and a certain kind of examiner, but as a general practice, it is a treacherous method to pursue. He insists, however, that the great objection from a psychological standpoint is that learning acquired through such concentrated effort is not so permanently effective as that extended over a long period.[1]

2. A second suggestion recommends a careful review of the entire course. When this review is left until the end of the course and amounts to a first learning of the facts in question all at one time, it is, as we have said, called "cramming." Certainly cramming is preferable to not learning any of the matter presented in a course, but the student should remember that such wholesale learning is likely not to stick. It lacks the lasting quality which comes from attentive repetition scattered over a longer period of time.

A thorough review of a course in which careful daily preparation has been made throughout the semester, is invaluable. It enables the student to see the course in perspective. It enables him to note its divisions with their less significant subdivisions. The immediate prospect of an examination in a subject greatly intensifies interest in it; and hence, learning by means of reviews is usually effective and lasting.

A few suggestions by which reviews may be made of greater service may be given. Let the student take a large sheet of paper on which to make a skeleton outline of the entire course. For his first step let him list those topics of the course deserving of emphasis and weight on the left side with those of lesser weight on the right. Then into this general outline let him fit the detailed facts of the course. By such a procedure the student will be enabled to select the highly important facts from the less important ones. Some instructors ask each of their students to make a set of examination questions on the course in question. This has a double value in that it helps the student to separate the essential from the non-essential elements and accustoms him to the interrogative state of mind which is the desirable one in a final examination.

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[1] H. D. Kitson, *How To Use Your Mind,* p. 192f.

3. A third suggestion recommends that preparation for an examination be done by groups of students together. It has been said that two heads are better than one. The group should not be too large, however, from three to five being probably a satisfactory size. Such study in groups has several advantages. It gives an opportunity to its members for an exchange of viewpoints. It enables them to compare their selections of the major and minor facts of the course. It increases the confidence of any member of the group who finds that he has already mastered most of the subject matter of the course, and it serves as an incentive to the one who discovers that his knowledge is less than it should be.

In order to increase the efficiency of such group effort a definite program of procedure should be formulated. At the first meeting of the group, the members should reach an agreement as to a plan of study. It may be agreed that each student at this first meeting shall outline the complete course, giving its major and minor divisions. These outlines may then be compared and each one in the group may be given a chance to explain his ideas of the relative importance of the different heads. The group may now assign a certain major division of the outline to each member who shall be expected to make a careful study of it for the next meeting. On that occasion each one can lay before the group in detail the facts included in his particular assignment and they can be verified and criticized by the other members of the group. At the conclusion of this group work each student should spend an hour or two alone in a final review before going to the examination.

4. A fourth suggestion emphasizes the need of being in excellent physical condition. This need we have already emphasized previously and it is unnecessary to do more than refer to it here. Those persons

who consistently keep themselves physically fit are enabled by good health to meet the tests of life with the most confident hope of success. The situation of the student at examination time is precisely the same. One result of the usual unsystematic cramming which students do just before examinations is a reduction of vitality and of mental clearness due to a reduction of hours of sleep, of recreation and of care in eating. The student should observe the same regular habits during examination periods that he does at other times.

5. A fifth suggestion emphasizes the need also of maintaining serenity of mind. This need too we have emphasized before. It is repeated here because at examination time the student is inclined to lose sight of its value. If careful daily preparation has been made throughout the course, there is no reason why one's serenity should be disturbed by the approach of an examination. A well-prepared student will welcome the opportunity which an examination affords to demonstrate his knowledge of the subject. Such a student will find the actual writing of an examination an exhilarating experience. Dread of examinations may result from two causes, first, that instructors occasionally use the examination as a whip in the course and make it very severe, and second and more often, that students feel themselves unprepared through neglect of their daily work.

TAKING AN EXAMINATION

Headley makes the following excellent suggestions for taking a written test:[1]

1. Get a good start. Be on time at the examination and settle yourself comfortably. Be sure that you have all necessary paraphernalia ready for use.

2. Look for general instructions about the examination. If they are given orally pay close attention. Many students plunge into an examination without reading or listening to instructions, with the result that they overlook some specific direction. Do exactly what you are asked to do.

3. Survey the entire list of questions. If ten questions are given read the entire number carefully and fix in mind what is expected of you. If it is a true-false test, notice how many statements are to be marked. Look over the whole of every test before you begin.

4. Select options if they are offered before beginning to write. You

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[1] L. A. Headley, *How To Study in College*, adapted from pages 363-374.

will have that off your mind and your program will be mapped out at the very start.

5. Apportion time. If each question in an essay type examination has equal value, divide your period of time into equal periods. Try to finish each answer in the allotted time.

6. Consider and answer topics in order. Jumping around from one question to another increases one's nervousness. It also increases the danger of omitting a question or of failing to answer the required number. Often, too, questions are arranged in a sequence that follows the sequence of the course. Taking up questions in order increases the likelihood of arousing responses from associations.

7. Study the nature of each question. Questions are of two types: questions of information, and questions of performance. The former may call for general knowledge such as a résumé or a summary, or for specific knowledge, such as dates, names, or facts. The latter may call for reactions to large aspects of a course such as the application of some principle, or they may require the solution of a specific problem such as the translation of a sentence in a foreign language.

8. Follow with strict care detailed directions. The student must note with care what each question demands: whether he is asked to state, review, define, summarize, illustrate, explain, diagram, give an instance, criticize, discuss, tabulate, solve, draw, evaluate, prove, or express an opinion. Let him do exactly what he is asked to do.

9. Be definite. This rule is violated widely by students. Nothing is more exasperating to an instructor than to be compelled to read pages of vague generalities. A few sentences definitely expressed are worth pages of indefinite statements.

10. Use concise forms of presentation. This is an art. It is here that one reveals what training he has had in writing. Diagrams, tables, graphs, etc., are also very helpful in making expression more concise.

11. Make cross-references. If two questions in an examination call for the same or similar information the student need not rewrite what he has said before, but may refer to the fact that he has used this material on another page. It reveals to the instructor the student's ability to discover relationships.

12. Keep mentally active. Some students waste time either by making a slow start or by stopping too long on a single question. In an examination the best way to start the thinking process to work is to set to work with energy, and when momentum is once established, it is important to keep going. The active and intellectually progressive attitude should be maintained throughout the examination.

13. Rest occasionally. Rest periods are fully as important in examinations as at other times. A rest of a minute or so every fifteen minutes will be highly beneficial in increasing one's efficiency.

14. Make use of a scratch sheet. The scratch sheet is especially necessary in tests involving problems which must be worked out, as in

mathematics and most of the sciences. In other exercises, it is often essential also to make the first draft on scratch paper.

15. Watch neatness. Virtually all instructors mark off for lack of neatness, some intentionally, some unconsciously. An instructor is likely to feel that an orderly paper represents an orderly mind. Neatness in written papers is conducive to clear thinking.

16. Reread your answers. This is important in order to prevent unintentional misspelling of words, incorrect sentence structure, and indefiniteness in expression. The rereading of what has been written always reveals opportunity for improvement. Sometimes the student will discover that he has omitted parts of questions and even whole questions. Such a rereading will also guarantee a proper arrangement of the pages of the paper.

We may add that since so much depends on our present system of marks, the student owes it to himself to check carefully every paper when it is returned in order to make certain that it has been correctly marked. Sometimes readers are careless or inaccurate in making up scores. Sometimes, too, instructors misunderstand the answers. In any case, the student should correct his wrong answers and find satisfaction in those that are correct.

SUMMARY

Both nature and society are governed by laws which are attended by rewards for those who obey and punishments for those who disobey them. It is not surprising therefore to find that the college has set up a system of rewards and penalties, the rewards for high scholastic achievement consisting of high marks, scholarships, money rewards, honors or special privileges, and the penalties for poor achievement consisting of low marks, probation, suspension and expulsion.

The system of rewards and penalties in our colleges may be defended on the ground that it is in harmony with the system operating in nature and society; it stimulates to greater effort and to better work; it offers criteria for promotion. Against the system it may be urged that the criteria for determining rewards and penalties are both unfair and unreliable; our examination system, which is undesirable in several respects, is too largely relied upon by it; it develops the get-by attitude by emphasizing performance of set tasks rather than learning itself.

The most widely used testing devices in American colleges are the recitation, the discussion, the quiz, the written thesis or report and the essay-type examination. There is a tendency at present to use objective tests as a substitute for these more subjective types. Among such objective tests are the enumeration test, the completion test, the true-false test, the multiple response and the association or matching test.

In order to meet the demand of students for ways and means of preparing efficiently for tests and examinations, we listed a series of suggestions, chief of which is the need for consistent daily work and frequent reviews. If the student will follow Headley's suggestions for taking examinations he will increase his chance of success materially. The student should seek to make his work as practical as possible by looking for connections between the learning that is required in his courses and the requirements of the world at large. The emphasis should always be on learning as much as possible.

QUESTIONS

1. What is the nature of the system of scholastic rewards and penalties in use in our schools? How is it similar to and how does it differ from the systems by which nature and society operate?
2. Name and explain the marking systems generally used in colleges. Which system is in use in your college?
3. What arguments may be advanced in favor of our system of scholastic rewards and penalties? What may be said against it?
4. Name the more common types of devices used for measuring achievement in our colleges, and then tell what may be said in favor of and against each type.
5. Make a list of suggestions to aid you in preparing for tests.
6. How may the student increase his efficiency in taking tests?
7. What may be said for and against cramming?

EXERCISES

1. What recent changes in attitude toward crime and criminals have you noticed? Toward misdemeanors in college? Explain these changes.
2. Make an objective test on this chapter. Make the kind of test that you would be willing to give to your class if you were the instructor.
3. What may be said in favor of emphasizing learning for mastery of a subject instead of learning to make a high grade and pass the course? (Sel. Ref. 6 and 7.)
4. In what respects do you feel that the system of grading in your college might be improved?
5. Read Sel. Ref. 1, 2 and 3, and note in what respects there is agreement on the following points:

(a) Purposes of examinations.
(b) How to prepare for examinations.

6. Hundreds of tests have been constructed in the past twenty-five years. The problem at the present time is to select those that are reliable. The following punctuation test is an example of a standardized test. It has been marked by thousands of high school pupils and college students. The purpose of the test is to discover the student's efficiency in punctuation. Mark it.

PUNCTUATION

The student will supply all necessary punctuation marks.

1. Arithmetic reading and handwriting are elementary school subjects.
2. Im here because he doesnt know youve come.
3. This document is dated Monday June 4 1895.
4. Dr and Mrs J M Jones are visiting Miss A L Anderson.
5. This is a long hard tiresome journey.
6. Its so hot that the bird burned its beak.
7. I say Let him go.
8. Henry will you come here.
9. I bought the following articles hats shirts stockings shoes.
10. The pupil wrote a theme on The Latest Invention.
11. He asked why I went to school.
12. The army with its equipment and munitions was on the march.
13. This store sells mens shoes and boys hats.
14. The train will arrive at 945.
15. I gave him money clothes and advice still he was not satisfied.
16. My address is 1964 Washington Street Arlington Texas.
17. He will arrive soon his train has been delayed.
18. If you have plenty of apples John said give me one.
19. Jenkins the grocer owns a large car.
20. The girls dress matched her mothers scarf.
21. Dodging his opponents the boy ran for a touchdown.
22. It is unkind to call foreigners dagos.
23. The morning sun how beautiful it is shines brightly.
24. Success depends on inspiration but it also demands hard work.

Score________________________

The above exercise correctly punctuated is on page xxi of the Appendix.

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CHAPTER XIV

THE ENJOYMENT OF LIFE

No human being can be said to be truly happy unless he enjoys life. The enjoyment of life, therefore, constitutes an essential part of happiness. Life may be enjoyed on many levels and in many ways. One person, for example, satisfies his appetite for food and drink with animal concentration; another makes eating and drinking a subordinate accompaniment to the fine art of conversation in which wit and humor as well as sense and imagination play leading rôles. One person gorges himself on the cheap fare of objectionable books, magazines, music, painting and sculpture while another relishes only the choicest of viands in reading and the arts. The latter cultivates a taste for those things of the mind that give insight and vision, that enlighten and uplift the spirit. It will be apparent from this that the quality of our happiness depends much upon what we enjoy and how we enjoy it.

Why College Students Should Consider the Problem of Enjoyment in Life

In certain respects the problem of enjoyment as it confronts the college student differs little from the same problem confronting the adult. If college life is to be a typical unit of a worthy life this is as it should be. But in other respects this problem of enjoyment is peculiarly the student's own, notably in this regard, that youth is the time when habits of enjoyment are most easily formed. We have previously called attention to the importance of developing desirable habits and attitudes early in one's college life. Psychologists have demonstrated that our enjoyments and our aversions consist largely of mental attitudes and appreciations which are inseparably connected with our mental and physical reactions and begin to take form very early in youth. They show that sometimes enjoyment or aversion determines how we react mentally or physically; at other times the way we act mentally or physically determines the degree and the kind of enjoyment or aversion that we feel. Apparently the student's outlook on life and his success in college and in the days after college will be greatly influenced by the sort of things that he enjoys. He cannot begin too early to analyze and develop his taste for enjoyment.

His obligation to consider early the problem of judging the values of enjoyment is accentuated by the fact that college days afford an unusual opportunity for such an evaluation. This is true within the classroom as well as without. The primary function of the courses in the arts and sciences in college is the cultivation in the student of many fine appreciations. He learns to feel the deep significance of the findings of science and of history, to appreciate the exactness of mathematics, and to perceive the subtlety of language and the beauty of thought in literature, and the enchantment of music and art. At the same time that vocational and professional courses aim to develop superior skills in special fields of action the enjoyments which accompany and follow this development influence greatly the quality of these skills and largely determine the student's philosophy of life. Not infrequently a keen enjoyment of certain courses determines the vocation which a student eventually selects.

Opportunities to study, evaluate and develop enjoyments and aversions are not confined to the classroom, however. On the contrary, in the eyes of many students the opportunities for enjoyment to be found outside the classroom are quite as numerous and even more valuable. These extra-curricular activities, falling as they do in the student's leisure hours, have a special value also in offering him opportunities to cultivate interests and recreations that will furnish lasting enjoyment for the leisure time of later life.

Athletics, because they occupy so conspicuous a place in college life, will occur to many minds as the extra-curricular recreation which should be mentioned first. But there is a growing body of thoughtful opinion both in college and out that regards this aspect of college life as greatly over-emphasized. It does, nevertheless, offer in one form or another, a source of wholesome leisure recreation to large groups of students. There is, without question, a wide variety of pleasure to be found in football, basket-ball, indoor and outdoor baseball, tennis, golf, soccer and hockey, while in certain parts of the country and at certain seasons of the year there are, in addition, rowing and swimming, skating and skiing. Outside the field of sports a multitude of widely varied diversions are to be found in debating and public speaking, in the staging of plays and operettas, in journalistic work connected with the college paper and similar publications, and in the management of college and club activities. The evenings of the week-end offer opportunities also for social pleasures of many sorts, including meetings of literary societies and similar groups. There are opportunities at that time likewise for visiting, for going to movies and plays, for listening to music, or for reading in the comfort of a quiet room.

The question of the use of our leisure time as a people is one that causes grave concern to many thoughtful observers of American life. The writer once heard Henry Turner Bailey declare that the future of American civilization will depend upon how wise a use of our leisure we learn to make. Whether the leisure time occupations in which Americans engage are conducive to individual and national welfare is seriously to be questioned. Our critics in this country and abroad assert that we are so possessed by an insane desire to master the forces of nature in order to exploit the riches of the earth, that we are interested only in the practical, the useful, and the remunerative. They tell us that our culture is barren and immature, that we have no genuine interest in literature, art and music—that, in fact we have no culture of our own at all, and no recreational life worthy of the name. Some see in modern American life the same signs of decadence which history tells preceded the fall of ancient Rome.[1]

These arresting statements suggest that a student may well develop during his college years the kind of enjoyments which will furnish the leisure of his later life with the rich rewards of a genuine cultural recreation. Since the college students of today will furnish most of the leaders of tomorrow they should endeavor to cultivate a taste in themselves for the more wholesome forms of diversions and to do what they can to promote their cause, as against those that exhaust the body by speed and nerve strain and the mind and the spirit by tawdriness and viciousness of appeal.

Finally, the student may well consider seriously the sort of things that he enjoys because increasingly he will be forced to determine for himself which enjoyments are most worth while. The student of today lives in an era in which the authority for his choices and his acts is to be found more and more within himself, and less and less to be derived from an external source as in the past. Kilpatrick shows how this tendency manifests itself in all classes of society. He points to the fact that kings no longer rule by "divine right," but have been forced to concede that their powers are derived from the consent of the governed. The world increasingly refuses to accept the word of a man or of a book as final authority; it insists on first hand experimental evidence to substantiate assertions. Hitherto young people have regulated their conduct, especially their moral conduct, by the written or unwritten dictates of organizations, of institutions such as the church, or of their elders; but now they are listening more and more to the dictates of their own inner selves. Students especially are inclined to question the why and the wherefore of rules of action. In a period of such momentous change as that today there is a peculiar need for the student to develop an inner authority, a conscience in matters of conduct, both moral and otherwise, which will guide him through a complex life. This inner authority is built largely out of the enjoyments and aversions of our lives. College days more than any other afford an opportunity to choose and to develop enjoyments and aversions that will create within the student a trustworthy authority.

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[1] Students will find an evaluation of American recreational life in J. C. Chapman and G. S. Counts, *Principles of Education.* Problem 16. See also G. Ferrero, *Ancient Rome and Modern America;* and Harry Emerson Fosdick, "America's Biggest Problem," *The American Magazine,* 107:11f. (May, 1929.)

There are four reasons then why students should consider the problem of enjoyment: because (1) their enjoyments and aversions constitute an inseparable part of their outlook on life, and greatly influence their success in college and later; (2) college days afford an unusual opportunity to study, evaluate and develop enjoyments and aversions, not only in the regular courses of study but especially in extra-curricular activities; (3) there is a serious need to learn the wise use of leisure both during college and after; and (4) the student must increasingly determine for himself which pleasures he shall choose since he regards the authority of organizations, of institutions, and of his elders as no longer adequate.

THE NATURE OF ENJOYMENT

Any attempt to explain the nature of enjoyment must begin with a consideration of the emotional aspect of life because enjoyment is in essence, an emotional experience. For many years physiologists, psychologists and philosophers have sought for terms to describe our emotional life adequately. Because this aspect of life is so intangible the search for exact terms by which to deal with it has been largely futile. There are, however, a few things which we may set down as facts.

The first of these is that emotions are inseparably connected with glandular activity. Physiologists have found, for example, that the emotions of grief and joy set the tear glands into action; the enjoyment of food is coupled with salivary and gastric glandular activity; anger, despair and other violent emotions are directly involved in the secretion of the adrenals; mental disturbance can be traced to the thyroids. Although the function of not all glands has as yet been explained, the experimental evidence indicates clearly that emotional reactions and glandular activity go hand in hand.

Experimental evidence increasingly shows, too, that emotional experience is only one aspect of a unitary life. Emotional reactions are not only inseparably connected with glandular activity, they also never take place apart from neural and muscular activity. This is apparent in the physical reactions of a small child when it is invited to come to someone of whom it is fond. Immediately its whole body becomes active. Its arms are outstretched, its legs and feet are set in motion, sometimes its whole body may express its excitement in a kind of jumping movement, it begins to laugh and its whole facial expression is one of eagerness. In short, the child responds all over. There is evidence that in a modified form all of our emotional responses are made in a similar way. Reading experts have found that very slow readers as a rule use lip movements and even indulge in a kind of inner speech when they read. Although lip movements are not evident in rapid readers, some kind of inner speech still persists. Gates says in agreement:

> Almost every stimulus to which we react mentally arouses skeletal and inner responses to some degree, although the organic reverberation may be very slight in many cases. . . . The wide-open eyes in wonder or surprise are an adjustment which provides a wide range of vision. The narrowed eyes in anger are a kind of visual concentration on the object of attack, while the puckering of brow and closing of lids serve to protect these vital organs from injury. The slowing of breathing, in the first stages of fear, provides for more adequate hearing.[1]

Our very speech recognizes definite bodily postures that are characteristic of certain emotions; we speak of being rigid with fear, bent with grief, or puffed up with pride.

Although emotions as a whole express themselves simultaneously all over the body, certain emotions are most active in certain neural locations. Psychologists find that emotional experience takes place primarily in the autonomic system.[1] This system consists of three divisions: (1) the cranial, which includes the nerves located in the upper part of the spinal cord, and in the mid-brain; (2) the sacral, which consists of the nerves connected with the lower part of the spinal cord; and (3) the sympathetic, which consists of the nerves connected with the intermediate part of the spinal cord. Gates tells us that the sympathetic division is involved in the stronger emotions of which fear and anger are the best examples; the cranial division and part of the sacral division respond to mild, pleasant emotions, such as bodily comfort and pleasure.

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[1] A. I. Gates, *Elementary Psychology.* Copyright 1928 by The Macmillan Company. Reprinted by permission. P. 184f.

The emotional stream of human life has these two dissimilar aspects which may be likened to the activities of two very different streams of water. On the one hand, the active sympathetic nervous system is like the fussy mountain stream which dashes hither and yon, throwing its spray high into the air, rushing heedlessly on its way; while, on the other hand, the active cranial and most of the sacral nervous division may be compared to the quiet, smooth running river which meanders slowly but with increased purpose through the plains: there is little fuss, but the accumulation of waters from here and there adds to its volume until it has enormous power, ready to drive turbines, to carry ships, and to afford pleasure to all who sanely use it. The important thing to note is that both streams are active; in one case the activity is largely lacking in restraint, in the other case restraint is the source of its power.

If we give free reign to the active sympathetic nervous system, our lives will be swayed by strong emotions which may easily get beyond our control. If, on the other hand, we cultivate the calmer emotions which are found in the cranial nervous division, we shall find ourselves possessed of a mechanism largely under our control and yielding readily to our bidding.

Each emotion represents a feeling, a state which has been variously defined as pleasant or unpleasant, representing satisfaction or annoyance. Generally the words "emotion" and "feeling" are used synonymously, but there is a difference. The term "emotion" refers to the entire experience—the nervous reaction involved, the degree of consciousness present, and the form that its expression takes. The term "feeling" refers more particularly to the state of consciousness which evaluates the quality of the emotion both during and after the experience. Thus, when we have an emotion of joy and we say that we feel joyful, it is to the pleasant part of our emotion that we refer when we speak of joyfulness being a pleasant feeling. Similarly, when we have an emotion of sorrow and we say that we feel sad, it is to the unpleasant part of our emotion that we refer when we speak of sadness being an unpleasant feeling. It is the pleasantness or unpleasantness, the satisfyingness or annoyingness of an emotional experience which constitutes the element of feeling.

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[1] This part of the nervous system is called autonomic because it is not dependent upon the cortex of the brain, that is, it may function without conscious control, although there is always some effect on mental activity.

When the feeling element in the emotion is pleasant or satisfying we call it "enjoyment," when it is unpleasant or annoying we call it "aversion." Webster's dictionary defines enjoyment as "having, possessing and using with satisfaction; taking pleasure or satisfaction in the possession or experience of; feeling or perceiving with pleasure." Its synonyms are satisfaction, gratification, happiness, felicity, and delight. Present day slang has coined the expression "to get a kick out of something" as a satisfactory equivalent. To experience enjoyment implies that we are engaged in an activity in which the essence of the emotional experience is a feeling of pleasantness, satisfyingness, or gratification. To say that we enjoy life implies that we enjoy many kinds of experiences and are accordingly happy. To say that we do not enjoy life means that we have many aversions, that we dislike many kinds of experiences and that we are accordingly unhappy.

We may say, then, that although it is not known precisely what an emotion is nor even what consciousness is, which is a condition of emotion, nevertheless we do know (1) that emotions are inseparably connected with glandular activity; (2) that emotional experiences are one aspect of a unitary life which involves the whole organism as it expresses itself through neural, muscular and glandular activity; (3) that some emotions have been localized sufficiently to make it possible for us to learn to control certain undesirable emotions and to develop certain desirable ones; (4) that the essence of every emotion is a feeling of pleasantness or unpleasantness, satisfaction or annoyance, and that (5) "enjoyment" includes all of those emotional experiences which are pleasurable or satisfying, while "aversion" includes all of those emotional experiences which are unpleasant or annoying.

The happy life is the life full of many pleasurable, controlled emotions developed through years of effective activity. An excellent example is the life of Charles W. Eliot, one of the great presidents of Harvard University. He was extremely active over a long period of years. When he was asked on his eighty-ninth birthday for the secret of his long life, he replied, "My experience does not furnish a short, explicit prescription for keeping health and working power till eighty-nine. I will say, however, one thing seems highly important—keep as calm under all circumstances as your nature permits." Activity under perfect control makes possible many deep and satisfying emotional experiences that may contribute greatly to happiness.

THE ENJOYMENT-AVERSION SCALE

To determine the abstract nature of enjoyment is one thing, to analyze the enjoyable element in one's pleasures is quite another. Percival Hunt reveals the difficulty of determining what is enjoyable when he attempts to define "pleasure." He says:

> Pleasure—it is hard to say just what the word means because there are so many kinds for each of us and so many of us. But suppose you like *Huckleberry Finn*, and running an automobile, and a vaudeville sketch, and the Bible story of Ruth, and your collie dog, and maple syrup, and your best friend, and some poetry of Keats' that you know, and a harmless joke on somebody, and washing the dishes for your mother or getting your father's umbrella he left at the store, or the sun's coming out all at once today, or even this paper. These are a mixed collection, I admit, but I intended them to be, for next I want you to notice the different levels they are on. Of course, they are different—nobody would say they are not—even if he likes them all. How do you rank them? What goes high in the list as best for you (or somebody else)? Pleasure in the Book of Ruth may go high, and so, too, may washing the dishes for your mother. The collie dog gives pleasure if he is a dog worth having around, and the sun's coming out is a good thing; yet the pleasure in the friend is more than in either of the others. They may be all worth liking, but in some of them the pleasure is strong and stays on for a long while.[1]

In order to objectify our discussion let us construct a scale. Let the

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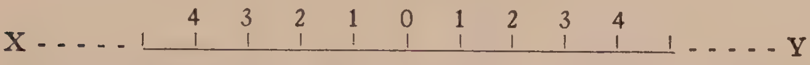
[1] *Enjoying the Arts. A Group of Essays on Appreciation,* p. 13.

line XY represent the total possibility of emotional experience, the segment OX that of enjoyable experience, the segment OY that of aversional experience. The solid portion of the line in each direction represents the extent of enjoyment or aversion which a given human being has experienced up to the present time, while the dotted portion represents the possibility of enjoyment or aversion which the same human being may still develop. Perhaps the dotted line should be much longer. The numbers on either side of zero represent degrees of enjoyment: one, a small amount; two, somewhat more; three, much more; four, a large amount, and so on.

Enjoyment-Aversion Scale



An examination of our enjoyments and aversions will reveal the fact that they vary in intensity as well as in quality. This variation manifests itself both within the same individual and between different individuals. Let us take, for example, a student whose fondness for ice cream is unusually keen. In the middle of a hot summer afternoon he will derive so intense an enjoyment from a dish of ice cream that, measuring by the enjoyment-aversion scale we might say that he was at 3 or 4 on the enjoyment side of the scale. A second dish he will still enjoy but not so keenly as the first. Let us say he is now at 2. By the time he has reached a fourth dish his enjoyment has moved back to zero and perhaps even beyond. At the sight of a fifth dish of cream he is possessed by a feeling of aversion, so that he is now at 1 or 2 on the aversion side of the scale. To take a slightly different aspect, the same student may enjoy a dish of ice cream in mid-afternoon of almost any day, but he may feel an actual aversion for it after a heavy dinner at night. He may enjoy it when he is feeling well but he may dislike even to see it when he is ill. It is evident, then, that the same stimulation will not always bring the same response from the same individual.

The same variation in enjoyment shows itself between two different individuals. I sit between two friends at a theater. One says that it is a fine play, the other says that it is not; one enjoys it, the other dislikes it. I go to a banquet at which turkey is served. My neighbor on the right eats the light meat but leaves the dark, while my neighbor on the left eats the dark meat, but leaves the light. One likes limburger cheese, the other dislikes it. One likes one cup of coffee, the other likes two. Again, one says that he does not care much for golf, the other says that he is very fond of it.

Intensity of enjoyment or aversion may actually be transferred to the opposite side of the scale in a short period of time. For instance, the writer knows a young woman who went to college to prepare herself to become an elementary school teacher in one of the island possessions of the United States. For more than a year she threw all of her energies into her training, finding great delight in her work. Toward the end of her second year she became engaged to a young man who was studying civil engineering. The young woman thereupon gave up her plan to teach school and changed her course to one that would make her of assistance to her prospective husband's career. It was interesting to observe that her change in plan so greatly lessened both the interest and the quality of work in her courses in elementary education that she expressed a positive dislike for a certain part of the work which a year before she had particularly enjoyed.

We perceive from the foregoing that the discovery of a variation in the intensity of one's enjoyment or aversion is comparatively easy. But to discover the variation in the quality of our enjoyment is not so easy because the standards by which quality of enjoyment or aversion is judged are largely subjective, that is to say, personal. Educators have not agreed on the names which shall be applied to the varying degrees of quality of enjoyment. We divide pleasures into the personal and impersonal, the lower and the higher, the purely physical and the aesthetic. Aesthetic pleasures we generally call "aesthetic appreciation" in referring to the fine arts—music, painting, sculpture, architecture, the drama, literature, including poetry, the essay, and the novel, and any art which represents supreme beauty of conception and skill of execution. Dictionaries define "appreciation" as a type of enjoyment in which the element of value becomes significant. It is therefore a high type of enjoyment.

How very difficult it is to appraise the quality of any enjoyment or aversion is revealed in Grant Overton's discussion of morality. He says:

> To some persons, anything ugly is immoral. But what is ugly? The squalor of life in tenements? The dissipations of the rich? If I shout that my neighbor's mustard-yellow curtains are ugly, I have no doubt that he thinks my Turkish carpet far worse. We all know some person

otherwise agreeable who has one personal habit—a detail of attire or perhaps a manner of eating—which offends, possibly disgusts us. He may have his one secret objection to some trick of ours. Morality is a good deal like that. . . . The morality or immorality of a piece of fiction is, I believe, far more a matter of presentation than we generally suppose. But it is also a matter, to some inescapable extent, of the mental age and mental equipment of the reader.[1]

There is no agreement, not even among experts, as to what constitutes a despicable form of pleasure or a noble form, a deplorable form or a highly prized form. What is despicable to one person or to one group may be highly prized by another person or another group. One person attends symphony concerts or grand operas and finds in them inexpressible delight, while another considers the same performances "highbrow," or examples of artificiality and hypocrisy. One person thinks of poems as the ravings of madmen, another sees in them the most perfect expression of the divine in man. One person pays forty dollars for a seat to see two skilled fighters decide a world championship, another makes every attempt to stop the performance alleging that it is the acme of brutality. In Europe and America, a kiss brings happiness to a lover; in Japan, it is an uncouth thing, a disgusting practice.

We might multiply examples indefinitely. Those that we have given clearly show that there is no agreement as to the criteria by which the quality of enjoyment may be judged. The student finds himself in a very real dilemma. He is urged to make a careful choice of his enjoyments and aversions but there are no universally accepted standards by which he may determine their quality. What, then, shall he do?

It may be well to point out here that if we were compelled to halt even a single activity in life until agreement was universal as to whether it should be engaged in at all or how it should be performed, the complexity of life would be even greater than it is. Happy living depends largely upon individual initiative and upon the approval of a majority of the individuals in the circle in which we live. The student should seek criteria for judging the quality of his enjoyments and aversions, therefore, in his own experience and in the experience of his fellows.

CRITERIA FOR JUDGING THE QUALITY OF ENJOYMENT

The discussion in the preceding sections of this chapter has revealed the fact that enjoyment and aversion may be cultivated and developed by training. Since enjoyments and aversions, likes and dislikes, bear so directly upon character, the student should realize that the things that he enjoys and the things that he dislikes have a deep influence on what he is. The choice of enjoyments is largely a personal responsibility, a fact that will become more apparent from the questions we shall propose for determining the quality of enjoyments.

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[1] *Enjoying the Arts. A Group of Essays on Appreciation,* p. 11.

Is my enjoyment of this experience sincere? This is the first question with which a student should challenge each one of his enjoyments, for sincerity of enjoyment is basic to happiness. Grant Overton declares:

> In judging a book, you judge yourself. If all the world says it is a fine book, quite possibly all the world is right; and if you say it is a poor book, quite possibly the fault is in you.
>
> But you must always have the courage of your own judgment.
>
> This courage needs to be coupled with humility; but it is better to be wrong than to be afraid, and it is far, far better to be honest than to be a snob.[1]

Our thinking concerning the enjoyment of experiences is likely to be confused by supposing that the enjoyable element is in the thing which we enjoy. You say that you enjoy an apple, or a show, or a sunset, as if the enjoyable element were in the apple, in the show, or in the sunset. In reality the enjoyment exists only in you who do the enjoying. The apple, the show, and the sunset are merely stimulations which bring about in you emotional experiences which you call enjoyments. Any attempt therefore to determine the quality of enjoyment must begin with *you*.

Witter Bynner says:

> There are three approaches to judgment of any art. First, there is the simple untutored approach, which has been over-ridiculed by the satirical echo: "I don't know anything about art, but I know what I like." Second, there is the approach of the cultured individual who tries to combine his own judgment with the majority judgment among those whom he considers his peers. Third, there is the conventionalized approach of the complete academician who subdues personal judgment to the cumulated judgments of other academicians deader than he is. The first approach is human, respectable and, in the end, conclusive. The second is one of those compromises by which we live. The third, fortunately the rarest of the three, has nevertheless an influence out of all proportion to its value: a great influence, for instance, on school-

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[1] *Enjoying the Arts. A Group of Essays on Appreciation*, p. 10.

> books. The first approach is of the heart, without which the others are only shadows. The first might be called a love-letter, the second an invitation to tea, the third an obituary.

In speaking of poetry he says:

> First be sure that you read it, that you are not judging by hearsay; then be square with yourself as to feeling it, liking it, respecting it, or the opposite; then keep your heart and mind open by listening. . . . With poems as with persons, choose for yourself, enjoy for yourself, reject for yourself.[1]

When we couple intelligence and a maximum of world experience with sincerity and open-mindedness we have the proper conditions for a reliable judgment of the quality of any particular enjoyment. Sincerity then is the first criterion of the quality of an enjoyment.

The second question with which a student should challenge each one of his enjoyments is, Which stage of conduct does this enjoyment exemplify? McDougall classifies the stages of our conduct as follows:

a. The stage of instinctive behavior modified only by the influence of the pains and pleasures that are incidentally experienced in the course of instinctive activity. A student eats too much and the unpleasant consequences modify his behavior in regard to how much he eats.

b. The stage in which the operation of the instinctive impulses is modified by actual rewards or punishments, administered by the social environment. A student anxiously seeks the attention of his instructors and fellow students by too much talking. When his efforts are met with silence or sarcasm he modifies his conduct. He learns to speak only when asked or when it is appropriate for him to do so.

c. The stage in which conduct is controlled, in the main, by the anticipation of social praise or blame. A college student decides not to go home over the week end but instead to study at the library because he fears that he may fail in an examination the following Monday.

d. The highest stage, in which conduct is regulated by an ideal that enables one to act in the way that seems to him right, regardless of the praise or blame of his immediate social environment.[2] The sacrifice of one's life for his country is an example of this stage of conduct. To go as a missionary of a church to a foreign country might be another example. A student who persists in pursuing a certain course because he believes it will train him for a successful vocational career in spite of the advice of friends to the contrary is still another.

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[1] *Enjoying the Arts. A Group of Essays on Appreciation,* p. 18f.

[2] William McDougall, *Social Psychology,* Chapters VII and VIII.

Let it be understood that not all human conduct can be graded strictly by this classification. Conduct is a complex affair. An activity which may appear to be highly unselfish and an example of the fourth stage, may in reality be propelled in the background by motives and instincts which, if they were known, would exemplify rather stages two and three.

Now, using McDougall's classification of conduct as a scale by which we may measure the quality of enjoyment, we may say in general, that the more nearly the enjoyment is dominated by mere instinctive or physical forces, the lower the quality of that enjoyment ranks, and, on the other hand, the more nearly the enjoyment is dominated by an ideal accepted absolutely as one's own, the higher it ranks.

A third question with which a student should challenge each one of his enjoyments is, How full of meaning is this experience to me? Some students do not enjoy music, painting, sculpture, or nature. In the main this is so because these things mean little or nothing to them. Meanings are the core of every experience. When we say that we enjoy a flower, we imply that for us that flower has developed a number of meanings. These meanings may be derived from its color, its fragrance, its shape, its arrangement of parts, its habits, or all of these together. A number of years ago the president of the writer's *alma mater* paid him a visit. One afternoon the two of them went for a walk through a large city park. As they entered the park the president expressed his admiration for a magnificent sycamore tree. As the walk continued, he pointed out one tree after another and revealed the peculiar beauties of each one, together with his own delight in them. To the writer, his friend's intimate enjoyment of trees was a revelation. He had walked through this park many times, and he had looked at the trees in it, but he had derived no great enjoyment from them because they meant little to him. But after this incident, trees, wherever he saw them, possessed new beauty and new meaning, and they offered him new enjoyment in consequence.

Dewey says:

> Nothing is more striking than the difference between an activity as merely physical and the wealth of *meanings* which the same activity may assume. From the outside, an astronomer gazing through a tele-

> scope is like a small boy looking through the same tube. In each case, there is an arrangement of glass and metal, an eye, and a little speck of light in the distance. Yet at a critical moment, the activity of an astronomer might be concerned with the birth of a world, and have whatever is known about the starry heavens as its significant content. Physically speaking, what man has effected on this globe in his progress from savagery is a mere scratch on its surface, not perceptible at a distance which is slight in comparison with the reaches even of the solar system. Yet in *meaning*, what has been accomplished measures just the difference of civilization from savagery.[1]

Agnes Repplier makes the assertion:

> Taste and judgment are founded on knowledge, and the power of comparison which knowledge gives. Men and women who have read great poems, great novels, and great histories have a standard by which to measure. Otherwise they must accept the standard set them with no real understanding of its value.[2]

The student who cannot perceive the enjoyable nature of certain experiences will find that increased understanding will usually bring increased enjoyment. Poe's "Annabel Lee" conveys much more meaning when we know the conditions under which the poem came into existence—that the tragedy of Annabel is a tragedy in Poe's own life. Knowledge of the French Revolution greatly increases our enjoyment of Dickens' *Tale of Two Cities*. Charles Lamb's essay "Dream Children" we enjoy more if we know how many of his own dreams were woven into it. The overture from Wagner's *Tannhäuser* grows in significance when we hear in it the throb of Wagner's own heart, torn by great conflicting emotions. The rendition of a violin solo has a fuller meaning if we have tried our own hand at playing the violin. Trees, birds, butterflies, are the delight of the naturalist because he understands so much about them. It is only as the student's activities accumulate new meanings through experience that his enjoyments grow.

A fourth question by which a student should challenge each one of his enjoyments is, To what does this enjoyment lead? We have already suggested that each student will be confronted frequently during his college career with situations which will force him to make choices. In some situations a given choice may seem to have no more than present significance but in reality it may have a far-reaching influence on his life. For example, a student may find himself, through his choices, indulging in intemperance and excesses of various sorts. His immediate enjoyment in such a life may be great, but later years may find him in the clutches of a habit which threatens to impair seriously his physical well-being and to bring him failure and unhappiness. A fellow student, on the other hand, may live in moderation during his college years only to discover that that moderation has paved the way for excellent health, success and contentment in later years. Again, one student may elect courses in which a minimum of mental effort is demanded. He assumes that if he gains sufficient credits to secure a diploma he will be assured of a successful vocational career. He overlooks the fact that in electing "snap" courses he is developing a habit of indolence and an attitude of "getting-by" which may stand squarely in the way of his success in later years. Another student, realizing the strength of the habits and attitudes which he develops during his college years, may choose those subjects which demand a maximum of mental effort. He is likely to find that such a course has increased the number and the quality of his enjoyments besides promising him vocational success as well.

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[1] John Dewey, *Democracy and Education*. Copyright 1916 by The Macmillan Company. Reprinted by permission. P. 243.

[2] *Enjoying the Arts. A Group of Essays on Appreciation*, p. 26.

In certain situations the student must choose between the gratification of physical pleasures and the satisfaction of mental desires or spiritual aspirations. The hours between class periods, and those between the end of the class day and the dinner hour are full of opportunities to make choices which may influence his entire life. One student may idle these hours away by indulgences of a low order. Another may spend them in extending his knowledge by reading worth while books and magazines or in cultivating his tastes by studying the masterpieces of music, painting, sculpture or architecture; he may increase his skill by playing a musical instrument, by painting pictures, or by engaging in some wholesome sport. In the former case, continued indulgences will leave their scars on body, mind and spirit; in the second, desirable habits and attitudes will contribute to future success.

These examples should impress upon the student's mind the importance of analyzing the probable consequences of his enjoyments. He should train himself to prefer the higher and more deferred pleasures, for the more intelligent human being cultivates those pleasures which he knows will bring him more and more enjoyment as the years go by.

Dewey says:

> The bad man is the man who no matter how good he has been is

> beginning to deteriorate, to grow less good. The good man is the man who no matter how morally unworthy he has been is moving to become better.[1]

Kilpatrick defines education as the process of

> . . . continuously remaking experience in such a way as to give it continually a fuller and richer content and at the same time to give the learner ever increasing control over the process. . . . Education is such a remaking of life as brings growth, and that growth runs along the three lines of outlook and insight, attitudes and appreciations, and techniques of control.[2]

The quality of enjoyment then should be tested by what it does both now and hereafter for the student who experiences it. Although his enjoyment of an object may be immediate and intense, yet if that object eventually leads to inactivity, or to a breakdown or destruction of morals or of life, it is of low quality or value. If, on the other hand, his enjoyment accompanies an experience which promises more and fuller enjoyment both now and in the years to come, it is of high quality or value.

A fifth and last question with which a student should challenge his enjoyments is, How are my enjoyments related to the welfare of my fellows? In the first place, the student should ask himself, "Do my enjoyments contribute to the enjoyments of others or does my fun cause sorrow, pain or loss to others?" Thorndike makes the following assertion:

> Education as a whole should make human beings wish each other well, should increase the sum of human energy and happiness and decrease the sum of discomfort of the human beings that are or will be, and should foster the higher, impersonal pleasures.[3]

That modern society agrees with this viewpoint may be demonstrated by the fact that the genius of our day is concerned not so much with the extension of mere personal pleasure as with the happiness of the race as a whole. No other age has seen the invention of so many labor-saving devices by means of which the comfort of life may be extended. No other era has seen so many undertakings for increasing the happiness of so many people. Each year Christmas brings into our mail service a greatly increased force of workers whose business it is to transport the exchanges of good will, while in our business establishments other increased forces of workers serve millions of customers whose plan it is to increase the joy of their friends on Christmas Day. We observe birthdays by greetings and dinners and presents. We spend holidays at pleasure resorts, in the parks, and on the highways.

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[1] John Dewey, *Reconstruction in Philosophy*, p. 176.

[2] W. H. Kilpatrick, *Foundations of Method*. Copyright 1925 by The Macmillan Company. Reprinted by permission. Pp. 191, 257.

[3] E. L. Thorndike, *Principles of Teaching*, p. 3.

It is apparent on every hand that men more and more realize that the fullest enjoyment of their own happiness is dependent upon the happiness of their fellows. Sometimes the relationship of one's enjoyments to the welfare of his fellows assumes a negative aspect, that is, he may attempt to reduce or eliminate the discomfort of his fellows because a failure to do so on his part lessens the enjoyment of his own comfort. For example, wherever war appears, the humane service of the Red Cross is sent to alleviate the misery of suffering. Whenever floods or tornadoes visit sections of our country a general appeal by the Red Cross in behalf of the sufferers brings a generous response from the public. A major catastrophe such as the sinking of a ship, a railroad wreck, or an explosion which leaves behind it loss of life and limb stirs the sympathy of all who know of it. Although disease and pestilence still demand their toll of life the science of medicine, through the devotion and disinterestedness of its workers, is slowly winning its struggle against them. These examples reveal the development of a public sensitiveness to the distress of others which, if we relieve it, causes us to enjoy our own happiness and security the more. The result is a willingness to alleviate the sufferings of others in order that our own joys may be more nearly complete.

There are other more direct and more positive ways in which the student may maintain or increase his personal enjoyment by having due regard for the welfare of his fellows. He may, for instance, increase his own enjoyment by entering heartily into all those undertakings which demand his coöperation. The success of parties sponsored by the organizations to which he belongs as well as those sponsored by the college itself depend upon the willingness of each student to lend a hand. The joy which the individual feels in being one of a winning team in athletics and debating comes largely from his consciousness of having contributed his full share to the common success.

Similarly, a student will evaluate his enjoyments also in terms of the effect which they may have upon his fellows. An act which causes pain to a fellow student or to any human being is a contemptible source of enjoyment. Athletic coaches are trying to convince the members of their teams that victory won at the expense of injury or harm to the opposing team is hollow. The ascent to the pinnacle of success in college and elsewhere is not over the bruised bodies of one's enemies but on the shoulders of one's friends.

There are, then, five criteria by which a student may determine the quality of his enjoyments. He may ask himself these questions: (1) Is my enjoyment of this experience sincere? (2) To which stage of conduct does my enjoyment belong? Does it incline to be merely physical, impelled by instinct, or does it incline to be more purely idealistic, impelled by motives which are controlled by intelligence? (3) How full of meaning is the experience which I am enjoying? Could I increase its meaning to me, and thereby increase my enjoyment? (4) To what does my enjoyment lead? Will it lead to richer enjoyments on still higher levels or to eventual deterioration of health, and loss of material possessions and happiness? (5) How does my enjoyment affect my fellows? Does it contribute to an increase or a decrease of the general enjoyment?

WHAT TO ENJOY

The category of things that may be enjoyed is as long as human experience itself. Since human experience is complex, enjoyments are similarly complex. We have already indicated something of the range and variety of the enjoyments to be found in regular college courses, in extra-curricular activities, and in other leisure time occupations, from which students may choose. Such a variety in the possibilities of enjoyment in student experience suggests not only the need of setting up criteria for judging the quality of the enjoyment in any particular experience but it calls for consideration of what things one may wisely enjoy. We shall make several suggestions.

1. Look for the enjoyable aspects of experience. The happiest person anywhere is the one who searches out the enjoyable element in any experience wherever such an element is present. A seasoned New Englander may get joy out of a coastal storm which to him is glorious. The skillful golf player forgets a bad shot as soon as he has made it and thinks of the shot that is to follow. We may say also that a person who does not perceive the enjoyable elements in a serious life fails to

realize the fact that the richness and variety of its pleasures offer more lasting enjoyment than those of a frivolous life. One may be serious-minded and yet derive from his life a joy that will be deep and lasting; but if he is frivolous-minded his enjoyment will be at the best, superficial and fleeting.

2. Enjoy the gifts of nature. The eagerness with which college students seize upon all forms of enjoyment should make them keenly aware of the primal and universal beauties of nature. Their world—and ours—overflows with natural gifts that all may enjoy without stint. The exhilaration of fresh air and sunshine, the odor of flowers, the song of birds, the snowy crests of mountains, the wonders of gorges and waterfalls, of clouds and sunsets, of stars and northern lights, the patterns of snowflakes, the wealth of harvests, rivers and ocean breakers, quiet landscapes and deep forests—these and a thousand others are ours to appreciate and enjoy. Certain other gifts also each one of us has been endowed with by nature, health, intelligence and talents in varying degrees. These we may conserve and cultivate in a way to bring us directly or indirectly a wealth of permanent enjoyment.

3. Enjoy the Fine Arts. Besides this multitude of things to enjoy which nature has provided in the world about us, we find an equally rich and joy-giving realm that has been created by the genius and the skill of man—the realm of books and pictures, statues and music. We are the fortunate heirs of an inheritance that has been accumulating for ages past and it embodies the best that man has said and thought in the world. The environment in which the college student lives with its emphasis upon things of the mind and the spirit, ought to be peculiarly favorable to the cultivation of discriminating taste in this realm of the Fine Arts.

In the field of poetry he may deeply enjoy, among riches of endless extent, Shakespeare's *Sonnets*, the poems of Robert Burns, Keats and Byron, and two of our own times, John Masefield and Robert Frost. In the field of fiction, he may find delight in reading such novels as Jane Austen's *Pride and Prejudice*, Scott's *Heart of Midlothian*, Charlotte Brontë's *Jane Eyre*, Thackeray's *Vanity Fair*, Dickens' *David Copperfield*, Thomas Hardy's *Under the Greenwood Tree* and John Galsworthy's *Forsyte Saga*. Among short-story writers of excellence he cannot fail to enjoy O. Henry preëminently, Ring Lardner, Rudyard Kipling and Dorothy Canfield. Among plays he may read with pleasure five or six of the better comedies and tragedies of Shakespeare, "Dr. Faustus" by Marlowe, the comedies of Richard Brinsley Sheridan, "She Stoops to Conquer" by Oliver Goldsmith, and the plays of George Bernard Shaw and J. M. Barrie.

The realms of painting and sculpture are equally rich and varied. Among painters the student may cultivate an appreciation for such great Italian masters as Michelangelo, Raphael, and Leonardo da Vinci; for the Dutch master Rembrandt; for the French Corot and Monet; for the English Gainsborough and Turner and for such of our own interesting modern Americans as Edwin A. Abbey, John Singer Sargent, John La Farge and Frederick J. Waugh. In sculpture Michelangelo again is preëminent among the Italians of the Renaissance while our own times supply some notable names, those of the Frenchman Rodin and the American St. Gaudens, both recently dead, and those Americans still living, Lorado Taft, Gutzon Borglum, and Frederick MacMonnies among many noteworthy ones.

Music likewise offers rich possibilities of pleasure. An enjoyment of the beauty of the symphonies of Beethoven and Bach, and the songs of Schumann the student may cultivate by listening to them in a spirit of receptiveness: a desire to discover for himself the secret of the hold that these masters of music have upon the spirits of men. In a similar way he may listen to the oratorios of Handel and Mendelssohn that have moved audiences for more than a hundred years. If the splendor of opera is not within his reach he may yet cultivate a deep love for many of their finest passages by listening to them with intelligence and sympathy as they are reproduced through the media of the phonograph and the radio. Wagner's *Lohengrin* gives him the beauty of the "Bridal Chorus," and *Tannhäuser* the measured rhythm of the "Pilgrims' Chorus." The operas of Verdi, such as *Aida* and *Il Trovatore,* similarly offer him enjoyment through the union of song, orchestra and drama. Of a similar sort are the light operas of Sir Arthur Sullivan, such as *Pinafore* and the *Pirates of Penzance* whose charm as music is enhanced by the humor of their lines by W. S. Gilbert. He may find much that is worth appreciation and enjoyment, too, in certain less pretentious forms of music. Nevin's "My Rosary," MacDowell's "To a Wild Rose," Johann Strauss's "On the Beautiful Blue Danube," Elgar's "Pomp and Circumstance," and our folkmusic, the Negro Spirituals, offer a widely varied field of enjoyment.

4. Enjoy the heritage of great religions. A student may grow from an enjoyment of the primitive and less noble aspects of religious experience to a point where he may see in life "a vast and restless sea of forces and phenomena, infinite in number, extent, subtlety, and complexity"; he may develop a

> . . . faith in the benevolence of the cosmic order toward those who seek to understand and conform to its laws; a feeling of intimate kinship with nature and the whole of the phenomenal world; a life-long wonder in the presence of the marvelous manifestations of life and nature; a conviction that the feelings, sufferings, and aspirations of men are weighed in the scales of the forces of creation; a faith that righteous conduct is the finest product of the universe; a confidence in the power of men to choose between good and evil; a sense of membership in a universal brotherhood of men; a firm resolve to live in accord with that purpose which moves through the universe to fulfillment; a cheerful acquiescence in the demands for personal sacrifice in the promotion of the greater good; a feeling of deep security in the future which lies beyond the grave; a habit of thoughtful meditation on the meaning and value of life; an eagerness to engage in the eternal quest for the True, the Beautiful, and the Good; and, finally, a clear perception of and faithful allegiance to that ideal kingdom of peace and good will which for ages has been the hope of man, a kingdom in which justice will "roll down as waters, righteousness as a mighty stream."[1]

5. Our heritage offers even more which the student may enjoy. Moulton introduces him to a study of the nature of the world and of man by declaring that

> . . . it ranges from electrons up through atoms to molecules and to worlds and to suns and to galaxies of suns. In time, it covers not simply the brief span of a part of a human life, but it reaches back to the origin of worlds and traces the outline of their development down through the geologic ages to the present, and it looks forward to a distant future when they will come to an end.[2]

He may delight in these realms of history and of science in their manifold revelations. He may look through the telescope to view the starry heavens or through the microscope to behold the wonders of the bacterial world. The privilege is his to sit at the feet of the scientists from the earliest times, and particularly of those of the last century such as Agassiz and Pasteur, Dalton and Darwin, Galton and Helmholz,

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[1] J. C. Chapman and G. S. Counts, *Principles of Education,* p. 362f.

[2] H. H. Newman, *The Nature of the World and of Man.* Reprinted by permission of The University of Chicago Press, 1926, p. 1.

Herbert Spencer and Thomas Huxley, as well as under the tutelage of scores of great contemporary scholars in every field of science.

6. Enjoy companions. He should derive great enjoyment from his companions, from those closest to him in his family, and from his friends. His friends and relatives should be more to him than mere sources of help in times of need. He may find in them some of the finest personal qualities which exist in this world, loyalty, gentility, generosity, kindliness, faith, hope, love. After all, the qualities of a beautiful personality constitute the *summum bonum* of human life. To seek and find them in his companions implies that one has found them in himself.

7. Enjoy widely but make a specialty of one type of enjoyment. If the student follows the suggestions made in the preceding paragraphs he will develop a wide range of desirable enjoyments, but among them there should be one of which he makes a specialty. This one particular enjoyment he may derive from his vocation, or from an avocation. Such a specialization, the result of special gifts, may be the source not only of enjoyment to the one who possesses it, but of fame also. Galli-Curci and Schumann-Heink are household names in the realm of song, Dorothy Canfield is famous for her short stories, Madame Curie is one of the world's leading scientists, Mary Pickford is a motion picture "star," Thomas A. Edison is a wizard in electricity, J. Pierpont Morgan is an expert in banking, William Howard Taft is an authority in law, Charles Lindbergh is a master of flying. Undoubtedly each of them has a wide range of enjoyments, but in each case the greatest enjoyment of all is very probably to be found in the performance of his special skill.

It need not be assumed from this that one must become famous in order to enjoy life at its best, but one should become expert in some one activity, no matter how small. This specialization may consist of a superiority in making a dress, in playing bridge, in acting as president of a woman's club, in conducting a kindergarten, in teaching children to read, in constructing a piece of furniture, in selling an insurance policy, in painting a picture, in playing tennis, in performing a surgical operation, in delivering a speech, in serving as chairman of a committee, in playing a musical instrument, in directing a community project, in rearing a family, or in performing any one of a multitude of other activities.

From what, then, should a student derive his enjoyment? He should derive joy from the work that he does. If he cannot enjoy his work he should find something to do which he can take pleasure in. He should enjoy the free gifts of nature, and his heritage of the present and of the past. He should enjoy his companionship with fellow beings, who travel the road of life with him. And, while he enjoys a wide range of experiences he should not neglect the more centralized enjoyment of some special skill which will afford an opportunity for the expression and development of his own personality.

How to Build Enjoyment Centers

We have previously asserted that enjoyments and aversions grow and develop. In a sense we may say that they are built. Enjoyments and aversions are reactions which exemplify the learning process quite as much as does any other form of acquired behavior. The laws of learning which were discussed in the chapter on Fixing Behavior function also in the development of our enjoyments and our aversions. The student should, therefore, make use of his knowledge of the rules governing learning in his attempt to build desirable enjoyment centers. In addition let him consider the following suggestions which should be helpful in indicating how enjoyment centers may be built.

1. The building of enjoyments must begin at a point where some interest already exists. Professor Holden once said, "There is only one place where education can begin, and that is where the pupil is when he is there." Kilpatrick says:

> Whether it is feasible to build an interest along any given line depends first of all on the native capacities of the person. It seems that nature supplies a potential interest. Then some exigency of life stirs this to activity. The pursuit of this aroused activity involves new allied lines of practice. This practice in turn builds (arouses and fixes) new interests, which in their turn lead to more practice and more interests—and so on indefinitely.[1]

We have said previously that we cannot build something out of nothing. Nature must supply the capacity for enjoyment, and experience must help the student to develop this capacity. He must therefore study himself to discover just how much capacity nature has given him for enjoying the various experiences of life, and he must begin his building of enjoyment centers at this point.

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[1] W. H. Kilpatrick, *Foundations of Method.* Copyright 1925 by the Macmillan Company. Reprinted by permission. Pp. 91 and 156f.

2. The second important thing to know about the building of enjoyment centers is that enjoyments are largely marginal responses. By a marginal response we mean one which is an incidental accompaniment to another response which is itself the one directly sought. Kilpatrick calls marginal responses "concomitants," meaning that they develop along with other reactions. For instance when a boy makes a kite there are three types of responses—primary, associate, concomitant. The actual making of the kite exemplifies the primary or focal responses. Such thinking, judging and wondering about the quality of materials best for use in making the kite as well as about their use for purposes other than making kites are examples of associate responses. At the same time that these two types of responses are being made there develop also certain likes and dislikes, certain attitudes about the business of making kites, about the skill involved in it, a certain feeling of kindliness toward people who fashion things with their hands, and an increased insight into the joy of successful accomplishment. All of these last are called concomitants or marginal responses. When the student analyzes his experiences closely he perceives that the act of engaging in any major undertaking on his part brings many of these marginal responses, such as definite feelings of liking or disliking, and the development of certain attitudes and ideals. While he is learning the facts of geometry he is also learning to like or dislike geometry; while he is acquiring skill in playing a musical instrument he is at the same time learning to like or dislike that musical instrument in particular and its music—perhaps all music, even. Whatever central thing he may happen to be doing, he is at the same time developing concomitants—likes, appreciations, attitudes, ideals or their opposites.

3. Provide conditions favorable to building enjoyments. Since concomitants are so largely marginal the student should keep them in mind whenever he meets situations which afford choices. One way to do this is to make the physical conditions of experience as attractive as possible. Librarians, for example, have discovered that frequently students cannot be aroused to any enjoyment of our masterpieces in literature because the attempt to develop appreciation is made under adverse physical conditions. Miss Rosenberg of the Detroit public library reports that Jane Austen's *Sense and Sensibility*, *Mansfield Park*, and *Emma* were drawn from the library three times, twice, and once, respectively, in a certain year. She attributes the small circulation in part to

the unattractive binding and print of the volumes. Later a new edition of Jane Austen was purchased—one with excellent type and more attractive binding. When these new books were placed on the open shelves their circulation increased greatly.[1] The large circulation of modern fiction, especially of popular magazines, may be attributed, in part at least, to easily readable type, to many and attractive illustrations, and to unglazed paper. A student may increase the probability of desirable concomitants in his reading if he will, whenever possible, choose books with good print and attractive illustrations, if he will attend to light and temperature, and if he will select for reading a part of the day when his body is fresh and his mind receptive.

4. Another way to build enjoyments is to observe wisely the laws of learning. We have already said that we learn to enjoy in much the same way that we learn to do anything else. Let us suppose that a student has been asked to give a toast at a banquet. He works hard to prepare his speech. When the occasion arrives he delivers it to an attentive audience, and he receives vociferous applause and many compliments from his friends. He has found the whole experience exhilarating and enjoyable and he develops an enthusiasm for speech-making. He looks forward to another opportunity of a similar sort. But let us reverse the situation. Suppose that in preparing the same speech for the same banquet he has difficulty in finding material, and even more difficulty in organizing it. When the occasion arrives he delivers it to an inattentive audience; and instead of being greeted with enthusiastic applause his effort is met with perfunctory clapping and only a few offer him any compliments. The whole experience has been exceedingly disagreeable. He is disgusted with the whole business of making toasts, that is, he forms an aversion to it.

In either case he has definitely built something. In the first one he has built an enthusiasm, an enjoyment. In the second, he has built a dislike, an aversion. In each case the Law of Effect and the Law of Exercise were mightily at work. In the one case, his efforts were rewarded with satisfaction; in the other, with annoyance. The result in each case was the building of a mind-set, or attitude. In the first it was favorable, in the second unfavorable.

So it is with the building of all enjoyments. If the student wishes to develop an enjoyment for a certain thing, such as music for instance, he must first engage in or listen to a form of it which exhilarates him, he must attach definite satisfaction to his successful attempts, either to perform or enjoy, and he must emphasize in imagination his successes until his enjoyment is permanent; until, in short, it becomes a mind-set.

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[1] W. L. Uhl, *The Materials of Reading*, p. 77f.

5. Associate with people who exhibit a fine sense of enjoyment. The student may increase and extend the breadth of his enjoyments by associating with those whose enjoyments are varied and stimulating. Somebody has said that appreciation cannot be taught, it must be caught. To "catch" it we must associate with people who have it. It has been asserted that for a generation after the death of Phillips Brooks, young men of unusual talent were still entering the ministry in New England due to the magic of his influence. It was not an accident that Goethe became one of the world's master poets. He gave due credit to his mother for his joyful nature and to his father for his breadth of vision and precision of expression. When, in the life of any great man or woman, we look behind him we usually find one or more individuals who have stimulated those qualities which later developed into greatness—from whom they "caught" an inspiration. Fortunate indeed is the boy or girl who is born into a home of refinement, where enjoyment of the fine things of life is the rule. But many of us are not so favored. We may grow up in an environment full of the commonplace, among temptations to enjoy the ignoble rather than the noble. It becomes wise therefore to seek out for our friends those who will help us develop an appreciation for those things in life that may rightly be called the Good, the True and the Beautiful.

Summary

The enjoyment of life constitutes an essential part of happiness. To attain true and permanent happiness the college student should choose wisely his enjoyments and aversions. His choice of enjoyments should be made with care because (1) they develop habits and attitudes which materially affect his success in college and in later life; (2) college days afford an unusual opportunity to study, evaluate and develop desirable enjoyments and aversions; (3) students should learn to use leisure time wisely; and (4) students must assume more and more responsibility for their choice of enjoyments—choices which in the past, were made for them by outside agencies and authorities.

Since enjoyments are so largely emotional in nature a student should remember that every enjoyment involves certain glandular organisms which in turn are inseparably connected with mental and muscular reactions. Psychologists have demonstrated that the more violent emotions, if exercised freely, are detrimental to health and happiness. Therefore the student should cultivate the calmer emotions through self-control which in turn will develop strength of character and stability of living.

The Enjoyment-Aversion Scale is helpful in determining the intensity of our enjoyments and aversions and in classifying their relative value. The Scale also reveals the complexity of enjoyments and aversions and thus encourages the student to be tolerant of the habits and attitudes of his fellows while he is at the same time critical of his own.

For determining the quality of the student's enjoyments the following five criteria were suggested:

1. Is my enjoyment of this experience sincere?
2. Which stage of conduct does this enjoyment exemplify?
3. How full of meaning is this experience?
4. To what will this enjoyment lead?
5. How are my enjoyments related to the welfare of my fellows?

The varieties of enjoyment are great in number and their nature is exceedingly complex. No individual can determine absolutely what another should enjoy. Nevertheless the student will do well to consider the ancient and fundamental enjoyments that are as old as the race. We suggested therefore that he (1) look for the enjoyable aspects of his experiences; (2) enjoy the gifts of nature; (3) enjoy the Fine Arts; (4) enjoy the heritage of great religions; (5) enjoy the nature of the world and of man; (6) enjoy companionship; (7) enjoy many things but make a specialty of one type of enjoyment.

In suggesting how enjoyment centers may be built we said that the building of enjoyments should begin where one's interests lie. He should analyze what nature has given him for development. He should remember that enjoyments are largely marginal responses, that is, they come along with other activities in which he engages. Therefore it is important that he pay much attention to the physical conditions under which he works, that he utilize the laws of learning to help him build desirable enjoyments, and that he associate with people whose enjoyments are of a high order.

QUESTIONS

1. Why should college students seriously consider their enjoyments and aversions?
2. How may an acquaintance with our physical organism enable us to improve the quality of our enjoyments? How are emotions and enjoyments related?
3. Define enjoyment, aversion, appreciation, character.
4. Explain the enjoyment-aversion scale. By examples of your own, show how it measures the quantity of your enjoyments or aversions. Of what value is such measurement?
5. List the five criteria set up in this chapter for judging the quality of enjoyments. Can you add other criteria of your own?
6. Make a list of the experiences mentioned in the section "What to Enjoy," which give you pleasure. Make another list of things you do not enjoy.
7. Choose some one of your special enjoyments and show how you built it up.
8. How may the laws of learning be used in the building of enjoyments?
9. How is method involved in developing enjoyments or aversions?
10. What rôle does example play in developing enjoyments?

EXERCISES

1. List arguments in favor of the consideration by young people of their enjoyments. (Sel. Ref. 2 and 8.)
2. Evaluate the following experiences by the five criteria set up in this chapter. Arrange them in the order of their value, the most valuable first: eating spinach, attending church services, reading *Whiz Bang*, drinking lemonade, smoking a cigarette, playing chess, listening to a lecture on companionate marriage, memorizing Joaquin Miller's poem "Columbus," visiting a sick friend at the hospital, attending the opera *Il Trovatore*. Now arrange them in the order in which you like them best, the most liked first.
3. Ask a friend or a classmate to rank the experiences in exercise 2. Compare his ranking with yours. What do you find? How may the five criteria for evaluating enjoyments and aversions help you in selecting desirable enjoyments? How may they help you in evaluating the enjoyments and aversions of your friends?
4. List ten things that you enjoy very much. Then list ten things which you dislike very much. Test each by the five criteria. Are your extreme likes and dislikes defensible?

5. How would you proceed in developing a new enjoyment? How would you break down your enjoyment of something which you know is deleterious?
6. How are enjoyments and aversions related to character?
7. Explain Henry Ward Beecher's assertion, "Books are the windows through which the soul looks out." What does Lyman mean by the three levels of reading? What do you think of Shuman's way of evaluating books? (Sel. Ref. 7.)
8. In "Enjoying the Arts" read the essay on the subject in which you are most interested. Do you agree with the ideas presented? (Sel. Ref. 4.)

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5. Ferrero, F. *Ancient Rome and Modern America.* G. P. Putnam's Sons, 1914. An attempt to show that we are going the way of ancient Rome because we refuse to use our leisure time properly.
6. Kilpatrick, W. H. *Foundations of Method.* The Macmillan Company, 1925. Chapter XIV: "Meaning and Thinking." The importance of meanings in the development of enjoyments.
7. Lyman, R. L. *The Mind at Work.* Scott, Foresman and Company, 1924. Chapter VII: "Reading for Enjoyment." Several very good sections on the development of appreciation in reading.
8. Stormzand, M. *Progressive Methods of Teaching.* Houghton Mifflin Company, 1924. Chapter VI: "The Appreciation Lesson." An attempt to analyze the elements in appreciation as well as suggestions on the development of appreciation.

CHAPTER XV

THE CHOICE OF A VOCATION

A century ago the choice of a vocation was a relatively simple matter. Vocations were few in number; boys usually followed in the footsteps of their fathers, and girls became housekeepers and homemakers in imitation of their mothers. But today there are more than 9,000 different kinds of jobs in this country. Women are increasingly entering the vocations which have been followed almost exclusively by men for centuries, and men on the other hand are doing women's work in ever larger numbers. A century ago the number of students in college —all men—was small and the training required for their chosen vocations was neither very extensive nor very specialized. Today more than 100,000 students, both men and women, graduate from our colleges and universities every year. Most vocations require broad understanding, keen insight, and specialized training. Individual business success today depends largely upon a wise choice of vocation based on a thorough knowledge of what that vocation requires and on an analysis of a candidate's abilities in the light of those requirements.

Why a College Student Should Choose a Vocation

A student should give serious thought to his prospective vocation because his success in it will depend greatly upon an understanding of many considerations, some of which are extremely intangible. These considerations center around three things, the student himself, his prospective vocation, and the means by which he prepares himself for it.

In a preceding chapter we concluded that the development of personality constitutes the chief function of a college education. Our discussion revealed that each human being represents an individuality different from every other human being and that this fact of individual differences makes personality a most complex affair. The success or failure which attends one's efforts in his chosen vocation depends to a considerable degree upon the personality of the individual. In choosing a vocation, therefore, the whole range of a student's personality traits is the first thing to consider. He must analyze his skills, his habits, his likes and dislikes, his attitudes of mind, his ideals—in short, his whole physical, mental, moral and social equipment. The following illustration will serve to show how a single dislike may interfere materially with success in a vocation. The writer knows a young superintendent of schools who decided to give up his teaching in favor of life insurance. He possesses an excellent personality, exemplifying most of the desirable traits of a successful life insurance solicitor. But during the very first week of soliciting insurance he discovered that he disliked intensely to urge "prospects" after they had once declined to take out insurance with him. For years this young man had consistently refused to force an issue as something that he extremely disliked. Now, unexpectedly, this dislike and this habit of mind seriously interfered with success in the new vocation to which he had turned. The result of this experience was that he returned to teaching.

After an examination of his personality traits there are certain questions about the vocation in which he feels an interest, that a student should consider. For example, what is the future of this vocation likely to be? In a changing civilization like the present one certain vocations change greatly even in ten years. The horse-drawn carriage, for instance, was put out of business by the automobile in little more than a single decade. Men who had been trained as carriage makers were compelled to change to some other trade. A college freshman recently told the writer that she hesitated to specialize in public school music because she feared that modern inventions reproducing sound might revolutionize the whole program of music instruction within the next twenty years. There are other questions which a student may well ask about a vocation toward which he inclines. What will its probable money return be? What likelihood is there of fluctuation in wages? How steady is employment in it? What are its demands on physical strength, on mental acumen, on moral stamina and on social or political skill?

After an analysis of his personality traits, and a consideration of certain practical aspects of a contemplated vocation, he should give serious thought to the amount of preparation that it will require. The amount of money that such preparation will cost, and the length of time that it will take, what degree of approval or disapproval he will meet from his parents or friends, the availability of a first rate training school, what his previous training of home, elementary and high school will contribute toward his final preparation—these are a few of the aspects which this larger question involves. The amount of money which the student can afford to devote to his training and to tiding him over the first lean years following it if he is to set up independently, is alone an immensely important matter. Newspapers recently reported that Clarence Darrow, the famous criminal lawyer, advised boys with little money against training for law as a vocation. He declared that only wealthy boys had a chance to succeed in the law. He based his advice on such facts as the long and costly training required, the large number graduated every year from law schools, and the keenness of competition in the profession of law. Each profession or vocation that suggests itself to a student as desirable may well be closely examined on these three heads, the length and cost of training, how rapidly new members are entering it, and how keen competition may be in it.

One of the things which a student expects a vocation to yield is a financial income sufficient to guarantee a comfortable living, to provide adequately for old age and to allow him to enjoy life on the plane suggested in the preceding chapter. The problem of dependency in old age is one to which he may wisely give a little thought in considering his own future. A few years ago the American Bankers Association made a survey of the economic status of American men and it found that every group of one hundred young men, starting at twenty-five years of age, each one self-supporting with promising prospects, will find itself divided into classes as follows forty years later: fifty-four will be in poorhouses or totally dependent on others' charity, thirty-six will be dead, six will still be working for a living, three will be well to do and one will be rich. As a people we have a wide reputation for being prosperous but in view of the large per cent of dependency in old age, such a conclusion is hardly sound, in so far at least as it is based on individual prosperity.

This failure of so many men to provide for an adequate competence in old age is due partly to their failure to choose vocations suited to their abilities, partly to their failure to practice thrift especially during their prosperous years, and partly to the prevalence of the notion that what a student does in high school and college doesn't matter since it is only after he leaves high school or college that he really begins to live. Gowin and Wheatley say:

> Many times you have looked forward to holding a job and going to work every day just as your father and other people do. But have you

ever stopped to think of the fact that you have a job now? You surely have, for the school is your place of work, five or six hours a day, five days a week, and perhaps forty weeks a year. Your job is going to school.[1]

The best way to learn to do a thing is to do it. The surest way for the student to increase the probability of his success in later life is to attain success during his college life.

It frequently happens that a student is compelled to enter upon his vocational career long before he expected to do so. Many a student comes to college expecting to remain four years, who finds it necessary for one reason or another to leave college before the end of that time, and enter upon a vocation. Failure in their class work is one of the most frequent causes of this shift in program. In 1924 Registrar Hugh H. Caldwell of the University of Georgia found a mortality of 32 per cent among the freshmen of 107 colleges. The deans in the Southern Association of Colleges and Secondary Schools, in a study covering twelve states and including 136 colleges, reported that freshmen failed in 30.8 per cent of the courses in which they were enrolled. In 1925, C. R. Maxwell of the University of Wyoming reported to the North Central Association that 24.1 per cent of freshmen in 659 colleges had failed in at least one subject.[2] The figures in Table VII show how many young men and women between the ages of sixteen and nineteen inclusive are making a start on their vocational careers. We learn from

TABLE VII

Number of Young People In and Out of School at Ages 16 to 19, Inclusive[3]

Age	Number	In School Per Cent	Out of School Per Cent
16	1,972,948	50.7	49.3
17	1,855,191	34.6	65.4
18	1,910,046	21.6	78.4
19	1,830,934	13.8	86.2

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[1] Gowin and Wheatley, *Occupations*. By permission of Ginn and Company, publishers, 1923, p. 1.

[2] *The Sixth Yearbook* of the Department of Superintendence, 1928, p. 140f.

[3] Taken from the Census of 1920, U. S. Bureau of the Census, 1920, III, p. 15.

this table that at the age of sixteen only a little less than one-half of our young people are out of school, at the age of seventeen the per cent is 65.4, at eighteen it is 78.4, and at nineteen the per cent has climbed to 86.2.

The number of colleges in the United States that limit admission to those young men and women who give promise of succeeding in their chosen vocations is growing each year. The larger endowed colleges are all following this practice already. Harvard, Yale, Princeton, Columbia, Chicago, Dartmouth, Stanford—to mention only a few—limit the number of students who may enter each year. Although the choice of its students is based on many considerations, each of these colleges is greatly interested in the probable success which a prospective student will achieve during his college career and particularly in his chosen vocation.

Finally, in considering the choice of a vocation a student may well keep in mind the fact that he owes a debt to society for the education which he has received at so little cost to himself. He may well remember too that although the 700,000 American college students constitute hardly more than an approximate 6 per cent of the total population, yet from this small group will come, in all likelihood, more than three-fourths of the men and women whose superior achievement will be recorded in *Who's Who in America* during the next forty years. The ability of college students to choose a suitable vocation, to prepare for it, and to succeed in it, has become a tradition in American higher education. It is evident that a large number of college students accept as their own the responsibility to discharge their debt to society by exhibiting in their chosen vocations a high degree of physical skill, mental acumen and spiritual devotion.

The conception, held in some quarters, that attendance at college is "a four year loaf" does not harmonize in the slightest degree with what society expects of a college graduate. We find then that each college student should give serious consideration to a vocation because (1) the wide range in the number and kind of vocations has greatly increased the complexity of the factors which determine success or failure; (2) the prospect of making a comfortable living which allows for enjoyment on a high plane, and of making adequate provision for old age, depend upon a successful vocational career; (3) the student may find himself compelled to enter upon his vocational duties before he expected to; (4) increasingly American colleges are limiting their acceptance of students to those who give promise of successful achievement in their chosen vocations; and (5) students owe a debt to society for the education which they have obtained at so little cost to themselves.

SOME GENERAL CONSIDERATIONS ON THE CHOICE OF A VOCATION

There are three questions which the student should consider before he takes the steps necessary to the choice of a specific vocation. The first question is, How early should the choice of a vocation be made? Unfortunately there is wide disagreement among the answers to this question. H. G. Wells feels that every boy and girl should begin earning a living at fifteen or sixteen years of age. This position is an extreme one which would necessitate a choice of one's vocation in the elementary or junior high school. Others think that the choice need not be made until the student enters the senior high school, which should therefore offer thorough preparatory training for occupations. Still others believe that the high school course should be general in nature, that occupational choice should be postponed to the senior year of the high school course and that preparation for one's chosen vocation should be made subsequently in a technical or professional school. Still others feel that the time for choosing a vocation should be determined by the nature of the vocation. According to their viewpoint if the vocation demands manual skill the choice should be made during the high school period and preparation should be made in a high school that offers a general course, or in a technical school. If one's leaning is toward a profession his choice should be made during his college course and the preparation for it should consist in part of courses of a broadly cultural nature and in part of courses of a specialized and professional nature.

Undoubtedly the question of the best time to choose an occupation raises many considerations, one of the most important being the financial status of the individual who must make the choice. There are many persons who are following certain vocations today because they had to go to work at an early age and were compelled to choose occupations that were available at the time. Since the discussion here concerns primarily the college student we may assume that he will have at his disposal enough time to make a well-considered choice of a vocation. The student should heed the following remarks of Gowin and Wheatley:

> There is no short cut either in the choice of an occupation or in the preparation for it. For thousands of years people have tried to discover how to choose an occupation by the shape of the head or the characteristics of the face, but they have never been able to prove their methods useful. In contrast with such methods, it is important to remember that the choice of your occupation is an educational proposition. You cannot choose a calling in one day's time or in one year's time. Your decision must be based on a period of long study both of yourself and of the needs of your fellow men.[1]

It may be said at this point that an early and final choice of a vocation is usually the result of strongly-marked early preferences, abilities, sympathies, and background, all of which together may unite to fix one's mind from childhood on a specific vocation. In the same way qualities of personality, acquired habits, skills and attitudes which have been developed to a large degree before a student comes to college may combine to determine his choice fairly early in favor of one vocation and against another. Persistence, for example, is a very valuable quality in occupations which demand salesmanship. If the student has not developed this quality and if he does not feel that he will be able to develop it to any extent he should automatically eliminate from his field of choices all of those vocations which require great persistence. Sometimes a strong dislike for some one feature of a vocation will very early determine a boy or girl against it. The writer was reared on a farm. One of the reasons he left the farm was because he developed a strong dislike for milking cows on cold mornings. One of the writer's friends intended to become a nurse. A visit to a clinic convinced her however, that an acute sensitiveness to the sight of blood and wounds, of which she became aware, would almost certainly interfere with her success in this vocation and she turned to insurance salesmanship, in which she is now very successful. A student who has no liking for physics and mathematics will probably not choose engineering. Women enter teaching in such large numbers in part at least because they enjoy working with small children. These examples reveal how likes, natural skills and abilities will influence fairly early the choice of a vocation.

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[1] Gowin and Wheatley, *Occupations*. By permission of Ginn and Company, publishers, 1923, p. 19f.

If the student has definitely made a choice of vocation before coming to college he should take the steps suggested later in this chapter to justify the wisdom of his choice. If he has not arrived at a definite choice he should make a number of his initial decisions along broad lines. He may decide whether he wishes to prepare for one of the professions—law, medicine, teaching, or the ministry, engineering, and so on—or for business. The choice between these two broad fields may be made rather readily on the basis of what the student wishes his future career to yield. If he has his eye on the accumulation of wealth, business will undoubtedly promise most to him; if, on the other hand, he is interested in service primarily and in rewards other than money, he will probably lean toward the professions.

If the student decides to enter the professional field he should consider the future advantage of completing fairly early some pre-professional courses. If, for example, he thinks that he may choose medicine or dentistry his emphasis in college may well be on the sciences; if he leans toward electrical engineering, on physics and mathematics; if toward the ministry, on English, history and philosophy. Such a choice of preliminary subjects will not only aid in meeting the pre-professional requirements, but they will also enable him to determine whether he will like a vocation in which such work is constantly required, and it will, besides, give him a certain liberal training which is desirable in every profession. His choice of the professions as against business must be followed by the choice of a specific profession and in many cases of a specific branch within that profession. Thus, if the student chooses teaching as his vocation he must decide on some branch of teaching. He may become an elementary school teacher, a high school principal, a city school superintendent, or a special subject supervisor.

If the student chooses the field of business, he should proceed in the same manner. First there should be the choice of a specific business, followed as soon as possible by a choice of the branch of the business which promises to give him greatest satisfaction and success. The length of time which the making of these choices should occupy will depend upon the time and money which is at the student's disposal, upon his inclinations, and upon what he expects his prospective vocation to yield.

The second question which the student should ask is, When should the preparation for a vocation begin? In answer to this question we may say in a general and preliminary way that a certain preparation began long before the student reaches college. All of the student's training which precedes his coming to college is in a sense preparation for his prospective vocational career. In college his program of studies may well include (1) some courses which prepare in a general sense for all vocations, (2) some which prepare for broad fields of vocational activity, and (3) some which are definite and specific. During the first year of college his course should consist largely of subjects of the first type with one or two of the second. Most colleges require certain subjects which are conceded to be basic, of all students. Examples of these are English literature, history, and general science. A subject of the second type is chemistry. Such a course should be taken by students who expect to enter medicine, dentistry or chemical engineering. Another course of the second type is accounting, which should be taken by those who expect to enter business. The third type of course should be postponed to a time when the student has made a definite choice of a vocation.

If the student follows these suggestions he will find that he is making a gradual preparation for his prospective vocation even in his freshman year. From then on his preparation will increase in definiteness and will lead directly toward his goal. In this way his preparation will combine subjects of broad interest as well as those more specialized ones which are needed in most vocations.

The third question which the student should raise is, Who should make the final decision in choosing a vocation? The answer is unequivocally: the student himself. The choice of a vocation should represent a conviction which has developed over a considerable length of time and after much serious thought. There are unreliable books which tell about short cuts to a vocation, and there are quack character analysts and false advertisements, but a decision based on them will have a treacherous foundation. Even the vocational guidance counsellors are agreed that the complexity of the problem of choosing a vocation is too great to warrant them to advise a student positively as to a definite choice of vocation. The Department of Personnel Study at Yale University says, "The only sound occupational guidance is intelligent self-guidance."[1] Each student must make the final decision himself. Nevertheless there are certain suggestions which have been found to be helpful in choosing a vocation. We shall suggest five steps which each student may well consider in his attempt to choose a vocation wisely.

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[1] *The Choice of An Occupation,* p. 20.

THE FIRST STEP: MAKE A SELF-ANALYSIS

We have more than once emphasized the value of initiative in a successful college career. Self-directed activity is nowhere more valuable than in the thorough analysis which the student should make of himself to determine for which occupation his interests and abilities fit him. How may the student discover what he will be able in all probability to do best and with the most satisfaction and contentment to himself?

If the college offers the services of a vocational counsellor the student should consult him at an early opportunity. If it does not, the student may turn to the publications of vocational counsellors which frequently give excellent suggestions.[1] He may make a beginning on his own account by listing some of the personal qualities which a given vocation in which he is interested, demands of its successful followers. The following list of qualities may form the basis of a first analysis:

1. Health—physical vigor, freedom from chronic ailments, condition of nerves.
2. Native intelligence—mental alertness, discrimination, ability to modify old forms of behavior, to learn new facts readily, and to adapt oneself to new situations.
3. Traits of character—honesty in thought, time, work and money; truthfulness, dependability, capacity for acceptable moral and social behavior; cheerfulness, resourcefulness, initiative, industriousness, sense of humor, patience, politeness, loyalty, sympathy.
4. Interest—ambition, persistence, self-confidence, enthusiasm, joyfulness in work, eagerness to achieve.
5. Social and economic status—social standing of family, amount of money at one's disposal for preparation, opportunity to secure financial backing if a business career is chosen.

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[1] For example W. M. Proctor, *Educational and Vocational Guidance*. D. Fryer, *Vocational Self-Guidance*. *The Choice of an Occupation*. The Department of Personnel Study, Yale University, 1929.

6. Leadership—ability to secure coöperation of others, to direct and to advise people, to formulate policies for others to follow, initiative, decisiveness, courage, aggressiveness.
7. Language ability—ability to use the English language proficiently in speaking and writing, to read rapidly and with comprehension and to give clear instructions.
8. Personal appearance—cleanliness, neatness, ability to adapt oneself to prevailing fashions so that one will appear neither too fashionable nor too conservative.

If the student will compare the above analysis with the two personality tests to be found in Chapter III,[1] he will observe how much light a careful examination of one's personality may throw upon the problem of what he can do best. This fact is further evidence that the development of a desirable personality is of the utmost significance in a college education.

The part that health plays in the choice of a vocation is a fundamental one and ought to be given first consideration. A young woman inquired of a certain vocational counsellor where she might find information about nursing as a vocation. Through one of these sources of information she learned that nursing makes unusually heavy demands on physical energy and vitality. A physical examination disclosed the fact that her heart was weak, and she was warned that this condition would probably make impossible a successful career in nursing. Her second choice was the managership of a fashion shop. When the counsellor advised her against this on the ground that it also would tax her health too much she turned her attention definitely to a search for a vocation which would give her the fullest possible freedom from physical effort. A study of her college record, of her natural abilities and of her likes and dislikes revealed a talent for writing. Guided by these facts she definitely turned to writing as a vocation and is now achieveing distinction as a short story writer with her health materially improved. Most of our colleges now require a physical examination of all freshmen. If the college does not provide for such an examination the student should have his family physician or the college physician give him such an examination early in his career.

There are many educators who believe that intelligence is the best single index of one's capacity to achieve success in a vocation. They point to the results of the intelligence tests given to our soldiers and sailors during the World War. Table VIII shows that there is a striking relationship between a man's intelligence and his job. The reader should note particularly the high median scores made by the professional group and the very low median score made by the unskilled labor group. The lowest score in the middle 50 per cent[1] group of

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[1] See p. 61f.

TABLE VIII[2]

OCCUPATIONAL INTELLIGENCE LEVELS, BASED ON 36,500 MEN IN THE UNITED STATES ARMY, ON THE ALPHA SCALE

Occupation	Median Score	Range Mid. 50 Per Cent
Laborers (Unskilled)	35	21 to 63
Semi-skilled Labor		
Cobblers	39	23 to 67
Teamsters	41	23 to 68
Farm Workers	42	24 to 70
Barbers	43	22 to 70
Horse-shoers	44	25 to 70
Skilled Labor		
Railroad Shop Mechanics	45	26 to 83
Bricklayers	48	23 to 81
Cooks	49	28 to 79
Bakers	53	35 to 83
Painters	53	31 to 79
Blacksmiths	54	29 to 83
Bridge Carpenters	55	27 to 84
General Carpenters	57	33 to 85
Butchers	58	33 to 85
Locomotive Enginemen	59	33 to 82
Machinists	61	33 to 86
Railroad Conductors	62	40 to 84
Plumbers	62	38 to 87
Tool Makers	63	41 to 88
Auto Repairmen	63	41 to 89
Chauffeurs	63	38 to 90
Toolroom Experts	64	43 to 88
Policemen—detectives	64	44 to 89

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[1] The middle 50 per cent is found by eliminating the scores which represent the lower 25 per cent and those which represent the upper 25 per cent on a test.

[2] *The Twenty-Third Yearbook* of the National Society for the Study of Education, Part II, p. 159, Table III.

TABLE VIII (*Continued*)

Occupation	Median Score	Range Mid. 50 Per Cent
Auto assemblers	65	44 to 97
Ship Carpenters	66	49 to 95
Business and Clerical		
Telephone Operators	70	58 to 99
Concrete Construction Foremen	75	48 to 116
Photographers	77	52 to 104
General electricians	82	58 to 110
Telegraphers	84	59 to 107
R. R. clerks	92	66 to 116
General clerks	96	74 to 123
Mechanical engineers	98	63 to 133
Bookkeepers	99	78 to 126
Dentists with officer's rank	106	84 to 130
Mechanical Draughtsmen	112	79 to 134
Stenographers	115	93 to 142
Accountants	117	101 to 145
Professional		
Civil Engineers	125	98 to 147
Physicians and surgeons with officer's rank	130	101 to 163
Army chaplains	150	109 to 173
Engineers with officer's rank	157	134 to 184

engineer officers is 134 which is higher than the highest score made by thirty-six other groups. On the other hand the highest score made by a similar group of unskilled laborers is 63 which is lower than the median score made by twenty-one other groups. Apparently intelligence like water seeks its own level.

Fryer suggests that each person may roughly rate himself on intelligence by comparing himself with his associates, but by taking a standard intelligence test he may determine much more exactly the status of his intelligence.[1]

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[1] Such standard tests are the following:

The Otis Self-Administering Test of Mental Ability, Higher Examination, published by the World Book Company, Yonkers-on-Hudson, N. Y.

The Army Alpha Intelligence Test, published by the Government Printing Office, Washington, D. C.

Brown University Psychological Examination. J. B. Lippincott Company, Philadelphia.

Thorndike College Intelligence Examination. Teachers College, Columbia University, N. Y.

A word of warning should be spoken at this point, however, against attaching too much importance to an intelligence test score. Intelligence testing is still in its infancy. Binet made the first one for general use in 1905. Experimentation since then has demonstrated that in individual cases the intelligence score has been increased materially by training.[1] It may be said with certainty that such intelligence tests as we have at the present time do not measure everything, that what they do measure they measure imperfectly, and that a low score on an intelligence test does not necessarily imply failure in a chosen vocation. There are other factors besides intelligence which must be reckoned with in predicting success or failure in one's vocation. Proctor, in proof of this, tells of

> . . . two disabled veterans of the World War, receiving $100 per month compensation, plus tuition and book expenses. One of them made a score on the Terman Group Test of Intelligence of 205—"Very Superior." The other made a score of 105, which for a person more than sixteen years of age meant "below average." In addition to high-grade intelligence, the first mentioned had had every advantage socially, economically, and educationally. The second named had worked to support his widowed mother from age fourteen, had had only two years of high-school preparation, and had been admitted to the university as a special student under a ruling favoring wounded ex-service men. The highly favored one "flunked out" at the end of his second year. The "below-average" one pulled through—on a scant margin, to be sure—but having earned, in addition to his A. B. in Geology, the respect and backing of his instructors. He is now successfully engaged in his chosen occupation of oil geologist. The other man tried three different occupations during the three years after graduating (by request), the third of which was as a salesman of paint products.[2]

One way by which a student may gauge his qualifications is to study his own reactions both in his regular classroom work and in his extra-curricular activities. These elements which are common to his college activities and to his later vocational activities are more numerous than he may surmise. If, for example, he habitually has difficulty in concentrating on his college work, that difficulty in concentrating will seriously interfere with his success later if he chooses a vocation which demands concentration. Ability to use English correctly and effectively is a *sine qua non* condition for a successful career as an author, contributor, journalist, magazine or newspaper editor, minister, teacher, or lawyer; and it is a valuable asset in every other profession. Similarly, engineering requires a superior knowledge of mathematics, the consular service demands superior skill in foreign languages, medicine requires a superior knowledge of chemistry, the law calls for a thorough acquaintance with history and political science, teaching demands insight into the psychology of learning and the philosophy of education as well as superior skill in method and classroom management to say nothing of an exhaustive knowledge of one's subject. Each vocation makes its particular demands, and a student's likes and dislikes in high school and college frequently point the way toward the vocation in which he may most reasonably hope to succeed, and away from the occupation in which he may most reasonably expect to fail.

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[1] See *The Twenty-Seventh Yearbook* of the National Society for the Study of Education, Part I.

[2] W. M. Proctor, *Educational and Vocational Guidance*, p. 64f.

The Department of Personnel Study in Yale University is of the opinion that the student's preferences may safely guide him in his choice of a vocation. He should determine, for example, whether he prefers to deal with *people,* directly or indirectly, with *ideas,* or with *things.* If he prefers to deal with people directly this Department suggests in its booklet a consideration of the professions of medicine, the ministry, law, and teaching; of personnel work in industry and education, of social service, and of management and selling in business. If he prefers indirect dealing with people the booklet suggests advertising, journalism, social investigation and public relations. If he prefers dealing with ideas it suggests invention; experimental, industrial and scholarly research; many phases of pure science or pure engineering as distinguished from applied science or applied engineering; artistic and creative professions including architecture, design, the Fine Arts, creative literature including the drama.

Work dealing with things should be considered from three angles. If the student prefers to work with things themselves—producing, handling and shaping materials—the booklet suggests various kinds of engineering and construction, the technical or production side of manufacturing, and the production of natural resources, agriculture, forestry, and transportation. If his choice is with the symbols of things—dealing with things in the abstract—it suggests accounting, statistical analysis in professional, industrial or financial fields, drafting and designing, credit work, and actuarial insurance work. If he prefers a vocation that deals with the commercial exchange and impersonal distribution of things it suggests newspaper and direct mail advertising, the retail store, the department store, the chain store and mail order house, purchasing, and trading companies.[1]

In making a self-analysis, then, the student should, first, determine the nature of his physical and emotional capital; second, take a standard intelligence test to determine his approximate mental score; third, discover his interests, his likes and dislikes; and, fourth, locate his special capacities by taking a series of achievement tests in a department of educational tests and measurements. Such a self-analysis will help him greatly to narrow down the field of vocational endeavor to an area in which his interests lie, and perhaps even to fix upon a specific vocation in which he can feel confident of success and contentment.

The Second Step: Investigate the Advantages and Disadvantages of Vocations

In his work with college students the writer has been amazed at the ill-judged reasons which they frequently give for entering a vocation. There is a clear need for a more thorough understanding of the general scope of occupational endeavor as well as for a study into the nature of the particular vocation which the student chooses.

He may well begin by investigating the extent of vocational opportunity in our country as a whole. The U. S. Bureau of the Census groups occupations into nine general classes. Table IX gives us the classification as well as the number of men and women occupied in 1920 in each of these classes. Some vocational counsellors prefer to classify occupations into five large classes as follows: agriculture, business, industry, home making, and the professions.

Each student will, of course, want to know something about every occupation, for citizenship in a democracy demands an understanding and an appreciation of the work of one's fellows. But obviously it will be impossible for him to familiarize himself thoroughly with every vocation, even if his self-analysis did not make such an extensive study unnecessary. Suppose, however, that he has made a careful survey of the larger fields of vocational activity and has found what demands they make as well as what returns they may be expected to yield. He has found in his self-analysis, furthermore, that his health is excellent,

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[1] *The Choice of an Occupation*, p. 21f.

TABLE IX

NUMBER AND PER CENT OF MEN AND WOMEN ENGAGED IN NINE CLASSES OF OCCUPATIONS, CENSUS OF 1920

General Division of Occupation	MEN Number	MEN Per Cent of Total Number	WOMEN Number	WOMEN Per Cent of Total Number
1. Agriculture, forestry, and animal husbandry	9,869,030	29.8	1,084,128	12.6
2. Extraction of minerals	1,087,359	3.3	2,864	0.0
3. Manufacturing and mechanical industries	10,888,183	32.9	1,930,341	22.6
4. Transportation	2,850,528	8.6	213,054	2.5
5. Trade	3,575,187	10.8	667,792	7.8
6. Public service (not elsewhere classified)	748,666	2.3	21,794	0.3
7. Professional service	1,127,391	3.4	1,016,498	11.9
8. Domestic and personal service	1,217,968	3.7	2,186,924	25.6
9. Clerical occupations	1,700,425	5.2	1,426,116	16.7
Total	33,064,737	100.0	8,549,511	100.0

that his mental score is high, that he prefers to deal directly with people, and that achievement tests indicate that he has a superior capacity in the use of languages and the social sciences. As a result of this double investigation he may decide to choose the field of the professions leaving the decision of a specific profession to a later date.

The choice of a specific vocation may be facilitated by investigating the advantages and disadvantages of the various vocations, the specific qualifications required in each, as well as the probable cost and time required for preparation. One of the things a student will look for in a vocation will be the probable beginning salary and the rate of advancement. The earnings of 5,023 engineering graduates[1] show the following facts:

Median initial salary upon graduation	$1500
Median salary five years after graduation	2800

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[1] *Bulletin No. 4,* Society for the Promotion of Engineering Education, October, 1926.

Median salary ten years after graduation	$4000
Median salary fifteen years after graduation	5000
Median salary twenty years after graduation	5500
Median salary thirty years after graduation	7500

The office of Personnel Research at the University of Buffalo[1] recently made a report on the normal earnings at age forty as estimated by 397 graduates of many colleges and universities of the United States and Canada. The following median salaries for the professions were reported:

Medicine	$9500
Law	6600
Chemistry and Chemical Engineering	5300
Dentistry	8000
Civil Engineering	5500
Electrical Engineering	5500
Mechanical Engineering	5200
Research Science	5900
Ministry	3500
Teaching	4000
Median for 397 in professions	6200

If the student's first choice is business he will be interested in the normal earnings at age forty as estimated by 316 college graduates in business.

Advertising	$6750
Insurance	6900
Banking	6500
Sales Management	7500
General Business Executive in Manufacturing or Commerce	6900
Investment Banking	6500
Miscellaneous	6000
Median for 316 in business	6700

The probable money return which a vocation offers to a successful man or woman is only one, and probably not the most important, consideration in the choice of a profession. Although teaching, for example, does not promise a salary as high as some other professions it offers compensatory advantages among which may be mentioned the opportunity for self-development, the opportunity for constructive achievement, the relative security of the profession, the opportunity to utilize the experience gained in teaching in another field of activity, and the satisfaction in work which is vitally important in a democracy. It has happened in recent years on the other hand, that many men have amassed fortunes in business and have also rendered a fine service to their generation. Examples of this type of men are Edward Bok and Herbert Hoover. The student may well remember that an expectation of financial reward has been only an incidental consideration to the greatest spirits of our time, like Madame Curie the co-discoverer with her husband of radium, for example. Indeed, as a rule, our truly great poets, musicians, artists, statesmen, heroes in times of war and peace, religious and educational leaders, social reformers, scientists, inventors, engineers, and architects are men and women whose vocational careers are dominated by an ideal of service rather than by the expectation of great financial return.

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[1] Edward S. Jones, University of Buffalo Studies, June, 1926.

The advantages and disadvantages of vocations may be investigated more readily if the student will challenge each vocation in which he is interested by the following check list suggested by Gowin and Wheatley.[1]

A Check List for Occupational Study

I. Importance:
   1. Is this occupation really necessary?
   2. Could society do without the service of the worker in this occupation?
   3. What would happen if the workers should stop working?
   4. Is the product of this occupation a necessity or a luxury?
   5. Is it necessary throughout the year, or only at one particular season?

II. Work done:
   1. What different kinds of work are done by various people in this occupation?
   2. Make a list of the different things a given worker does.
   3. Outline his day's work.

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[1] Gowin and Wheatley, *Occupations*. By permission of Ginn and Company, publishers, 1923. Adapted from pp. 98-101.

III. Advantages:
   1. Service to humanity.
   2. Chance to learn.
   3. Ease of entrance.
   4. Demand for workers.
   5. Steady work.
   6. Growing importance.
   7. Interesting work.
   8. Promotions.
   9. Friends and associates.
   10. Hours.
   11. Vacations.
   12. Good living.
   13. Healthful work.
   14. Moral and ethical aspects.
   15. Steps to higher occupations.

IV. Disadvantages and problems:
(Use the same list as that under III.)

V. Preparation:
   1. How much education is a minimum requirement in this occupation?
   2. What studies are most useful: English literature, oral English, composition, algebra, geometry, mechanical drawing, free-hand drawing, physics, chemistry, biology, physical education, history, civics, music, or other studies?
   3. Is a college education valuable preparation in helping the worker attain a greater success?
   4. Are there vocational courses which teach this occupation? Find information about them as regards admission requirements, length of course, cost, how conducted, advantages.
   5. Are there any opportunities for part-time practical work and part-time study, or for an apprenticeship? In this occupation is there advanced training to prepare a person for promotion to higher positions?
   6. What Saturday or vacation opportunities are there?
   7. Must the worker serve a preliminary or apprenticeship period? If so, how long, when, where?

VI. Qualities needed by the worker:
   1. Ability to get along with people.
   2. Ability to follow directions.
   3. Ability to lead other people.
   4. Ability to use good English.
   5. Cheerfulness.
   6. Common sense; good judgment.
   7. Courtesy.
   8. Ideals of honesty.
   9. Responsibility; trustworthiness.
   10. Ideals of service and usefulness.
   11. Initiative; resourcefulness.
   12. Mechanical skill.
   13. Orderliness; system; neatness.
   14. Promptness; punctuality.
   15. Perseverance; industry.
   16. Physical strength, health and vigor.

VII. Income:
  1. Can you estimate the yearly income under usual conditions of work? What are the wages per week, per month, or per hour?
  2. Can you arrange the different positions in the occupation in order of their income to the worker?
  3. What can you say about the income at the beginning, and the increases as one obtains further experience?
  4. What is the method of payment?
  5. Is the income sufficient to maintain an acceptable standard of living?

VIII. Effect on the worker:
  1. Social:
    a. Is he recognized as a useful member of society and given a proper place in society?
    b. Does his work help to make him more tactful and socially agreeable?
  2. Civic: Does this work tend to make him a better citizen?
  3. Physical: Does it have a beneficial effect on his health?
  4. Does it allow him to have a good home life?
  5. Recreational:
    a. Does it give him time for proper recreation, and does it encourage desirable forms of recreation?
    b. Are there rest or recreational periods during work hours?
  6. Mental: Does it stimulate the thinking of the worker?
  7. Moral:
    a. Does it help him to become a better person?
    b. Are the influences in the place of work wholesome?

IX. General considerations:
  1. What are the history, present status, and future of the occupation?
  2. What is its relation to other occupations?
  3. How does it rank in comparison with other occupations?
  4. May one enter this calling from any other?
  5. May this occupation become a stepping-stone to a better one?
  6. Are there instances of successful service in this occupation?
  7. Are the workers organized into unions or other associations?
  8. What laws influence or control the occupation or its workers?

A scrutiny of several professions with the aid of such a list of questions should enable the student to reach a tentative decision as to a specific vocation. After he has made such a tentative choice he should undertake a more intensive study of the vocation which he has selected, through wide reading on the subject. He will have at his disposal several general bibliographies on vocations. An excellent one is F. J. Allen, *A Guide to the Study of Occupations.* These bibliographies will suggest several types of available reading matter on this special subject. One type consists of pamphlets and reports on the various vocations as published by bureaus and other organizations making continual investigation of vocations. The publications of the Bureau of Vocational Guidance, Harvard University, and of the Department of Personnel Study, Yale University, are two examples. Another type of reading material on vocations consists of vocational monographs. An excellent example is *The Young Man and Vocation Series* edited by E. H. Sneath, and published by the Macmillan Company. In this series the student will find such monographs as "The Young Man and Journalism," "The Engineer," "The Newspaperman," etc.[1] There are also many books in which various occupations are described. D. Fryer, *Vocational Self-Guidance;* E. L. Bernays, *An Outline of Careers,* and O. L. Hatcher, *Occupations for Women,* are three good examples. Vocational magazines also offer much valuable information on vocations. The student should consult Allen's *Guide*[2] or Ayer's *American Newspaper Annual Directory* for authoritative information on such magazines.

The student may procure more direct information about an occupation by talking to a man or a woman who is engaged in it. If a student thinks of becoming a physician he should seek the counsel of a reliable physician. He should go with the physician on his round of calls, or visit his office, if possible, and get first-hand information about his prospective vocation. If teaching is his temporary choice, the student should visit schools, talk with teachers and find out all he can about this vocation.

Still another way to procure information about a vocation is to make a try-out in it. In some vocations this is possible only to a limited extent. It is worthy of note, however, that the try-out is recognized more and more by educators as a desirable part of a student's training. In medicine there are interneships for young graduates in medicine, in engineering there are summer camps for student engineers, in the sciences there are field trips, in agriculture there are experiments with animals and crops, in teaching there are observation and practice. A student who is interested in business may take advantage of the summer "try-out" employment offered by manufacturing plants, banks, investment houses, insurance companies, and mercantile establishments. An increasing number of schools make a conscious attempt to offer their students opportunities to apply what they have learned from their study.

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[1] The student will find a more extensive bibliography on vocations in the general bibliography in the appendix.

[2] See p. 188ff.

The student should not assume, however, that a search for information about his prospective vocation even by all of the ways suggested above will tell the whole story. The fact is that those who write about a vocation as well as those who tell about it are generally inclined to over-emphasize the attractive aspects and minimize the unattractive. Teachers, for example, may name short hours as one of the advantages of teaching as a vocation. Conscientious teachers know, however, that in reality the work-week of the teacher far exceeds the standard forty-four hour week of common labor. In addition to his regular class hours a teacher sometimes works one or two hours each day before classes begin, from one to three hours in the afternoon after classes are dismissed, from one to four hours each evening, most of Saturday and not infrequently some part of Sunday.

In addition to this tendency to ignore the undesirable aspects of any vocation, there is also the danger of under-rating the significance of certain difficulties in a vocation. In considering medicine, for example, students are inclined to think too often of the large fees which are paid for major operations. What they forget is that many major operations must be performed with little or no remuneration at all because the patients are not financially able to pay large fees. They overlook the fact also that frequently fees cannot be collected even though the patients were well able to pay them, and in many cases where they can, their collection is difficult and represents much effort and expense. So, too, a student is often greatly impressed by a physician's fine suite of offices with its elaborate equipment. He does not know what a large outlay in money such equipment represents nor how quickly much of the most expensive equipment becomes out of date and has to be replaced. Certain of these less glamorous aspects of medicine are easily overlooked by the casual outsider.

If the student will follow some such plan as we have outlined he will find it easier to reach a definite decision as to a vocation. If his investigation of a first tentative choice fails to promise what he hoped for he should make another choice and examine it with the same care that he used in the first case. As soon as possible, however, he should be ready to take the next step.

THE THIRD STEP: CHOOSE A SPECIFIC VOCATION

If the student has made a careful self-analysis and a thorough study of the vocation chosen tentatively he should now make a definite decision. No student can afford to continue his college work indefinitely without deciding such an important matter. The booklet published by the Department of Personnel Study of Yale University says on this head:

> The power of decision itself is a vital factor in success, and determination of some definite life purpose *per se* gives the individual an important advantage. This decision, of course, should be thoughtfully reached and based upon consideration of all available data. That it may eventually be changed should not prevent some conclusion along these lines being reached at as early a date as possible. Evasion of the issue or faltering hesitancy is a poor preparation for a life of leadership in any field and to make no decision at all as to a career is probably worse than to make the wrong one.[1]

A definite choice should be made, too, because the specialized courses which are required by one's chosen vocation await this decision. The writer was interviewed only a few days ago by a young woman who had pursued a general college course for four years expecting to be married upon graduation. When the marriage did not materialize she turned to newspaper work in her father's office. Three months later her father sold the newspaper and his daughter, although a college graduate, is now pursuing undergraduate courses in education which will qualify her for teaching. If this young woman had exercised sound judgment in the first place she would have foreseen the desirability of making a definite choice of a vocation early in her college career and preparing for it even though she might never have to earn her livelihood. More and more the program of studies required as preparation for a vocation consists of certain sequences of courses which take several years to complete. To postpone a definite decision too long means that the student may have to extend his college course thereby spending time and money which could have been saved by an earlier choice.

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[1] *The Choice of an Occupation*, p. 25f.

THE FOURTH STEP: PREPARE CAREFULLY FOR THE CHOSEN VOCATION

The abilities necessary for a successful vocational career may well be divided into two classes, (1) general abilities needed in all vocations, and (2) special abilities necessary for a specific vocation. What has been said about the significance of personality in Chapter III we may refer to again as applying equally to all vocations. There are certain personality traits demanded in every occupation although not always in the same degree. Honesty and interest in one's work, for example, are valuable in every vocation. Such qualities need to be cultivated from childhood. In the same way there are certain abilities which are demanded in every vocation. The ability to express oneself accurately and effectively in spoken language, and the ability to read rapidly and with understanding are two examples. These general qualities and abilities, it should be added, are the most difficult to acquire. The specific qualities needed in any vocation may be acquired much more quickly and effectively if the general qualities and abilities have been previously developed. If the student is able to acquire to a superior degree an ability to speak and write correct English, to read rapidly and comprehend fully and quickly, to think clearly and to form sound judgments; and if he acquires a knowledge also of the use of books, of making notes, of fixing behavior, and if he has in addition a large degree of native intelligence and a real desire to make a success of a vocation which he has chosen after a careful self-analysis and close study of the vocation itself—then the technical or special training for the chosen vocation will present little difficulty to him.

We must emphasize again that the student will do well to select courses in his first year of college that will develop that broad understanding and keen insight demanded in all vocations, and that will offer opportunities for exploration and at the same time fulfill some pre-professional requirements. In addition he may well pursue a program of courses under the guidance of an adviser in the department in which his major preparation falls. The student should enter upon his special preparation for his chosen vocation with eagerness and thoroughness. He should remember that the habits, skills and attitudes which are developed during the years of his specialized training will go far toward assuring him of a successful beginning in his chosen career.

THE FIFTH STEP: MAKE A SUCCESSFUL TRY-OUT IN THE CHOSEN VOCATION

We have already declared that certain general qualities, which are common to all vocations, the student began to cultivate the first day of his elementary school training. We suggested, too, that going to college is a specific job. The best way to increase the probability of success in one's chosen vocation is to do the job of going to college well. We have also said that there are more points of similarity between this job and one's future vocation than he may think. All of the activities involved in the student's physical life, which we discussed in Chapter VI, are common to both, so too are many habits and traits of personality which we discussed in Chapter III. The principles of relaxation, recreation and rest apply equally to both.

If the vocation chosen is highly specialized there may well be opportunity to practice in school some of the things that will be demanded in the vocation later. In some colleges each student spends stated periods of time alternately attending classes and working at the particular occupation for which he is fitting himself. The University of Cincinnati sends many young men into occupations by this plan every year.

Even in those colleges in which the entire time is devoted to classwork on the campus the student will find it possible to engage in many activities which may later affect his vocational success. This is particularly true of extra-curricular activities. Among these there are opportunities for developing interest, industriousness, leadership, skill in workmanship, coöperation and other desirable qualities which are common to nearly all professions. Frequently the extra-curricular activity or the part-time job is the beginning of a career. The writer knows of a young man who edited a college paper, worked part-time in a newspaper office and thus became interested in newspaper work. He is now a successful newspaper editor. Another young man of the writer's acquaintance had worked part time as a high school pupil in a wholesale grocery establishment. He became interested in business management, specialized in this field while in college and is now a successful manager of a chain of grocery stores. Such examples might be multiplied indefinitely.

Another way to make a successful beginning in a vocation is to select occupations during vacation periods which will offer opportunity for developing the skills essential to one's chosen vocation. If, for example, the student expects to be a salesman, he may try his hand at being an agent during summer months, or at clerking in a store, or at taking advantage of some other opportunity for salesmanship.

How to Apply for a Position

Once one's training is completed there are certain preliminaries that must be settled before one is ready to make an application for a position. One of these has to do with the applicant's choice of a location. Another has to do with his preferences as to the special work that may be possible in his vocation. If, for example, the student expects to be a teacher, he must decide whether he wishes his first experience to be in a large or a small school system, whether his qualifications fit him for rural, elementary or secondary school or college teaching, whether his subject being highly specialized or more general in nature will influence the sort of teaching position that he can hope to get, whether his work is the kind which will give him opportunity to become familiar with a small segment of a school system or with a large segment including an acquaintance with policies. The student should also consider his prospective employer. In some cases it is wiser to take a smaller salary at the beginning where there is helpful supervision and an opportunity for advancement, than a larger one where there is no supervision and little chance for advancement.

When once all of these matters have been settled the student will look for vacancies. These may be located through placement bureaus, employment agencies, magazine advertisements and friends. Of these, friends are the best. Every successful career depends upon staunch friends. Fellow students and instructors should be consulted freely for advice. After a vacancy has been located application must be made either by letter or personal interview, or both. Weseen has recently published a booklet on *How to Apply for a Position,*[1] in which he tells in detail how the student should make an application for a position by letter and by interview. He says that a good letter of application must contain the following:

1. An immediate statement of the purpose of one's letter, namely, to apply for a certain specified position.

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[1] Available at the College Book Store, Lincoln, Nebraska.

2. A statement of the source of one's information about the vacancy, or the reason that led him to apply.
3. An indication that he understands the needs of the position and the nature and importance of its duties.
4. A statement of his qualifications for successfully undertaking these duties.
5. The names of a few persons to whom reference may be made for the purpose of verifying these statements or of securing additional information.
6. A request for an appointment for a personal interview.

In regard to interviews Weseen has the following to say:

> The applicant's conduct in the interview is often the factor that wins or loses his case. The inexperienced applicant will probably be somewhat nervous in approaching his prospective employer. He should not get the erroneous notion that this nervousness is a fault peculiarly his own. It is entirely natural. Actual experience is the only road that leads to true self-confidence. To offset as far as possible his natural fear the applicant should prepare himself for the interview.
>
> The best preparation for an interview is a thorough study of the situation. Review the demands of the position and your qualifications for meeting those demands. Find out, if possible, who will conduct the interview. Do all that you can to avoid being surprised by the kind of person who is to question you or by the kind of questions that he will ask. Have an adequate reserve of information and have it readily available. Know your own past record so well that you can give full names, exact dates, and complete addresses without any hesitation. If you have any letters of recommendation, or appropriate specimens of your work, or other bits of evidence that can be carried in a pocket, bring them with you. Don't let your tongue run away with you. Beware of long speeches about irrelevant personal matters. Select important and influential points. Present these in such a way as to show clearly that you understand what the employer needs and wants.

His Majesty—The Worker

More important than the work is the worker, more important than the building is the builder, more important than the law is the lawyer, more important than medicine is the doctor, more important than the church is the preacher, more important than the engineering project is the engineer, more important than the school is the teacher, and more important than the home is the homemaker. In fact, if it were not for the worker, there would be no work; if there were no builder or lawyer, or physician, or preacher, or teacher, or homemaker, or any other vocational toiler, there would be no professions, no products, no buildings, no churches, no schools, no homes. Human beings are the center of every vocation, men and women are the most essential element in every occupation.

Because there are so many of us we are inclined to lose sight of the value of individual life. We marvel at tall skyscrapers and enormous office buildings, at transcontinental railroads and national highways, at speedy automobiles and fleet aeroplanes, at delicate inventions and ponderous machinery; we marvel at everything that man makes, but we must not in doing so overlook the man.

In choosing a vocation the student should therefore think of what his job will do to and for him as well as of what he will do to and for the job. If the prospective job, in addition to furnishing him with an adequate living, makes no promise of developing him as an individual, of calling out the best that there is in him, if it does not offer opportunity for service to his fellow men and great personal satisfaction to himself, he should turn away from it to something else which offers him a larger proportion of satisfaction. If, on the other hand, the job promises to make a man or a woman instead of an automaton, if it holds out the prospect of superior service to one's fellows, if it falls in line with a progressing, improving world in which men are more important than materials, then it deserves serious consideration.

Summary

The choice of a vocation is today a much more serious matter than it was a century ago. College students must choose from a wide range of vocations, in any one of which success will come in part from an understanding of the many complex factors which determine success or failure. A vocation should be chosen with care since so much of future happiness and success depend upon it. One's search should be to find a vocation which promises a comfortable living, provides for old age and makes possible an enjoyment of life on a high plane. An early rather than a late choice is to be recommended because many students are compelled to enter on a vocation before they expected to do so, and because in the case of the others their college course may be planned to yield them the fullest amount of broad as well as specialized preparation.

In making a choice of a specific vocation the student must follow to some extent the interests and preferences which represent choices made before he comes to college. The initial choice in college may be made along broad lines. The student may readily decide whether he prefers to enter the professions or business. If the preference is for the professional field certain likes may start him in the direction of a specific choice. If he likes sciences, for example, he may eventually choose medicine, dentistry or chemical engineering. As soon as he has tested his preferences in some of his college courses additional choices should be made which will lead eventually to a definite vocational choice.

The following five steps in choosing a specific vocation were suggested:

(1) Make a self-analysis.
(2) Investigate the advantages and disadvantages of vocations.
(3) Choose a specific vocation.
(4) Prepare carefully for the chosen vocation.
(5) Make a successful try-out in the chosen vocation.

Suggestions were also made on how to apply for a position and how to react in interviews with prospective employers. Finally it was declared that the worker is more important than his work and that the vocation chosen should afford the worker an opportunity to enjoy his labor greatly because he finds in it the fullest expression of his abilities.

QUESTIONS

1. Why should a college student choose his vocation with care? When should his choice be made?
2. Make a list of factors which influence vocational success. Then show how a knowledge of these factors makes a choice of vocation difficult.
3. Name the steps which vocational guidance counsellors recommend students to take.
4. What is the value of a self-analysis? How should it be made? Are there any dangers in making a self-analysis?
5. How should one proceed in studying the advantages and disadvantages of occupations? What results should such a study yield?
6. What influence will one's philosophy of life have upon one's choice of a vocation?
7. Make some suggestions on the best way to prepare for a vocation.
8. How may a college student make a successful beginning in his chosen vocation?

9. How should one proceed in securing a position? What are the essential elements in a good letter of application? What should the student keep in mind in an interview with a prospective employer?
10. Which is more important, the worker or his work? Why?

EXERCISES

1. Check your prospective vocation against the list of criteria on page 357f. Do the results increase or decrease your confidence in your choice?
2. Defend one of the following statements:
   (a) Postpone the choice of a vocation as long as possible, for general education and not specialized education is of most worth.
   (b) Choose your vocation as early as possible and then plan your whole college course to prepare yourself as thoroughly as possible for your chosen vocation.
3. Secure a copy of the Laird Test and check it. (Sel. Ref. 9.) Are you an introvert or an extrovert? Name several callings which seem to be well adapted to introverts. Name several well adapted to extroverts. Is a liberal education adapted better to introverts or to extroverts? Show how. Is professional training adapted better to introverts or to extroverts? How? How much of introversion or extroversion is inherited? How much acquired?
4. Read Strong's discussion of the Stanford Vocational Interest Test. (Sel. Ref. 7.) How might such a test help you to decide on a vocation?
5. Write a letter applying for a position in your chosen vocation. Check it against Weseen's and also against McKelvey's suggestions. (Sel. Ref. 8 and 5.)
6. Bok succeeded without a college education but feels that a college education would have been of great help to him. Frederick is a young man who has not yet won his spurs but he insists that a college education is a positive handicap to success in a vocation. Read the discussion by these two men and see if you can discover the fallacy in Frederick's reasoning. (Sel. Ref. 1 and 2.)
7. How is intelligence related to vocational success? (Sel. Ref. 3, 4, and 5.) How may you determine your I.Q.? What factors other than intelligence must be considered in predicting vocational success?
8. What evidence can you adduce to justify the statement by the American Bankers Association that most men are totally dependent on others' charity in old age?
9. Name all the rewards of a given occupation you can think of. Which reward would you consider the most important? Would it be wealth? Social prestige? Fame?

10. Check your abilities against the Stoelting Scale. (See Gowin and Wheatley, *Occupations*, p. 338.) What do you find?

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Correct Answers to Reading Test (page 184).

1. More.
2. Self-respect or international standing.
3. One.
4. Passenger express, ocean liner, automobile, aeroplane. (Any two.)
5. "Drawing the ends of the earth together."
6. No.
7. One.
8. More than three hundred.
9. South America.
10. Mexico.
11. Newspapers becoming more cosmopolitan, magazines less provincial, amusements show foreign influence, Olympics, athletic participation in international events, participation in international air activities. (Any one.)
12. Three.
13. Not trained properly for their work.
14. Small.
15. Better teachers, smaller number studying foreign languages but for longer period of time, more emphasis on reading and speaking and less on structure of language. (Any one.)

Punctuation Test Correctly Punctuated (page 307).

1. Arithmetic, reading and handwriting are elementary school subjects.
   This form is also correct: Arithmetic, reading, and handwriting are elementary school subjects.
2. I'm here because he doesn't know you've come.
3. This document is dated Monday, June 4, 1895.
4. Dr. and Mrs. J. M. Jones are visiting Miss A. L. Anderson.
5. This is a long, hard, tiresome journey.
6. It's so hot that the bird burned its beak.
7. I say, "Let him go."
8. Henry, will you come here?
9. I bought the following articles: hats, shirts, stockings, shoes.
10. The pupil wrote a theme on "The Latest Invention."
11. He asked why I went to school.
12. The army, with its equipment and munitions, was on the march.
13. This store sells men's shoes and boys' hats.
14. The train will arrive at 9:45.
15. I gave him money, clothes and advice; still he was not satisfied.
    This form is also correct: I gave him money, clothes, and advice; still he was not satisfied.
16. My address is 1964 Washington Street, Arlington, Texas.
17. He will arrive soon; his train has been delayed.
18. "If you have plenty of apples," John said, "give me one."
19. Jenkins, the grocer, owns a large car.
20. The girl's dress matched her mother's scarf.
21. Dodging his opponents, the boy ran for a touchdown.
22. It is unkind to call foreigners "dagos."
23. The morning sun—how beautiful it is—shines brightly.
24. Success depends on inspiration, but it also demands hard work.

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